



Municipality of Singapore

HEALTH DEPARTMENT.

ANNUAL REPORT

for

1934

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HEALTH DEPARTMENT.

Singapore, 20th February, 1935.

THE PRESIDENT,
MUNICIPAL COMMISSIONERS,
SINGAPORE.

SIR,

I have the honour to submit my report for 1934.

I. ZYMOTIC DISEASE.

1,770 cases were notified compared with 1,780 in 1933 and 1,660 in 1932.

The following table shows the comparison between the year under review and the previous ten years:—

Year	Typhoid Fever.	Diphtheria	Chicken-pox	Puerperal Fever	Erysipelas	Cerebro Spinal Fever	Paratyphoid Fever	Small-pox	Plague	Cholera	Typhus Fever	Scarlet Fever	Tuberculosis	Total
1924 ..	64	38	230	22	9	16	—	9	20	11	—	—	331	750
1925 ..	136	51	31	14	2	10	2	10	59	1	—	—	365	681
1926 ..	197	46	169	25	14	6	1	34	7	22	1	1	642	1,165.
1927 ..	235	29	193	22	5	17	7	19	4	30	—	—	733	1,294
1928 ..	230	59	350	11	8	15	12	9	5	9	1	3	808	1,520.
1929 ..	133	57	577	13	8	3	—	9	3	—	—	6	904	1,713.
1930 ..	156	63	349	11	9	22	2	—	—	—	—	2	965	1,579
1931 ..	150	65	211	28	6	8	1	3	—	—	—	—	944	1,416.
1932 ..	114	124	542	16	2	6	1	8	—	—	—	1	846	1,660
1933 ..	248	244	288	11	5	4	7	1	1	—	1	—	970	1,780.
Average for 10 years ..	166.3	77.6	294.0	17.3	6.8	10.7	3.3	10.2	9.9	7.3	.3	1.3	750.8	1355.8
1934 ..	116	254	412	6	5	7	4	1	—	—	3	2	960	1,770

(2-D)

The following table shows the incidence by nationalities:

DISEASE		Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
Enteric Fever ...		—	4	95	4	13	—	116
Diphtheria ...		13	17	177	18	20	9	254
Chickenpox ...		5	32	113	5	255	2	412
Puerperal Fever ...		—	—	5	—	1	—	6
Erysipelas ...		—	1	2	—	1	1	5
Cerebro Spinal Fever		—	—	6	—	1	—	7
Paratyphoid Fever ..		—	—	1	—	1	2	4
Smallpox ...		—	—	1	—	—	—	1
Plague ...		—	—	—	—	—	—	—
Typhus Fever ...		1	—	1	—	1	—	3
Scarlet Fever ...		2	—	—	—	—	—	2
Tuberculosis ...		2	9	713	75	141	20	960
Total ...		23	63	1,114	102	434	34	1,770

The following return shows the number notified for each month of the year.

DISEASE	January	February	March	April	May	June	July	August	September	October	November	December
Enteric Fever ...	20	5	10	19	8	9	4	3	5	9	4	20
Diphtheria ...	24	27	30	12	25	17	12	19	21	17	30	20
Chickenpox ...	26	28	55	77	45	28	25	11	12	32	33	40
Puerperal Fever ...	—	1	—	—	—	—	3	—	—	—	1	1
Erysipelas ...	—	—	—	2	—	—	1	1	—	—	—	1
C.-Spinal Fever ...	1	1	—	2	—	—	1	—	2	—	—	—
Paratyphoid Fever	1	—	—	—	—	—	—	1	—	1	1	—
Smallpox ...	—	—	—	—	—	—	—	—	—	1	—	—
Plague ...	—	—	—	—	—	—	—	—	—	—	—	—
Cholera ...	—	—	—	—	—	—	—	—	—	—	—	—
Typhus Fever ...	—	—	—	—	—	—	2	—	1	—	—	—
Scarlet Fever ...	1	—	—	1	—	—	—	—	—	—	—	—
Tuberculosis ...	105	71	93	93	83	64	78	63	68	98	87	57
Total ...	178	133	188	206	161	118	126	98	109	158	156	139

CHOLERA, PLAGUE AND SMALLPOX.

Once again I have to record a year practically free of these three dangerous Infectious Diseases.

There has been no case of Cholera for six years, and, with the exception of a single isolated case in 1933, no Plague for five years.

There was one case of Smallpox. It was of the haemorrhagic variety and the patient, an elderly Chinese woman, died a few days after admission to hospital. Though exhaustive enquiries were made, the source of origin could not be traced and no connection with any previous case could be established. Patient's home was an insanitary Plank and Attap hut in Serangoon Road. It was impossible to disinfect it properly so that it was deemed safest to demolish and burn it. Contacts from it and neighbouring huts to the number of 27, were sent to St. John's Island to undergo the usual quarantine period.

With regard to Plague prevention generally, the usual modified rat trapping was carried on throughout the year—both in the Port and the town proper. 3,736 rats so trapped were dissected, but none were found infected. Fuller particulars will be found in the Bacteriologist's report.

TYPHOID & PARATYPHOID FEVERS.

120 (4 Paratyphoid) cases were notified against 255 in 1933 and an average of 166.3 for the previous ten years. 62 deaths from this cause were recorded during the year.

The yearly average for the decade 1914-1923 was 130, so that allowing for the increased population it will be seen that there has been no improvement for the twenty years.

Except in January, April and December when the notifications were rather more numerous, the cases were evenly distributed throughout the year. They also occurred all over the town. This is in accordance with our experience of past years and showed that, as usual, the infections were fortuitous and entirely dependent on "carriers" either temporary or permanent.

It was impossible to give the time to a thorough investigation of every case as was done in 1933 when an Assistant Health Officer was fully occupied on this work for months at a time. In any case, however, it was not deemed necessary as it was considered that the investigation of that year definitely proved that most of the Singapore Typhoid is spread through the medium of "carriers" whose role is made easy by the manner in which food and drink for public consumption can be prepared in insanitary surroundings and hawked indiscriminately on the streets.

A series of 7 of the December cases is however worth a special note. 5 were notified on December 5th and 2 the following day. 2 were from 2 different houses in Emerald Hill Road, 4 from 3 houses in Killiney Road and 1 from Cavanagh Road—three practically adjoining streets. All the cases were in children but as one was below school age and all the others did not go to the same school it could not therefore be a school infection. It is a practical certainty that the common source of infection must have been a "carrier" itinerant hawker selling his wares in the

district, and having regard to the tender age of his victims, most probably a vendor of some form of sweet meat or ice cream. Three of the children succumbed.

Though on the subject of Typhoid, for reasons which I shall endeavour to make clearer later, I would record that during the year Dysentery was responsible for 286 deaths. While all the deaths recorded as Typhoid are undoubtedly due to that cause all of them being certified on the bacteriological findings or post mortem, it is possible that many of the Dysentery deaths are really Typhoid deaths, as, of the 286 deaths from this cause 131 were so certified by the Inspecting Officers on a "view" only. And it would be easy to make a mistake here. However the point is of no practical importance as the method of spread is the same in both diseases. With a water supply that is above reproach, a milk supply which is 90% tinned and a freedom from flies that will rival any town almost anywhere, there remains only one important method of transmission—"carriers" of either disease engaged in the preparation, handling and distribution of food and drink.

To some, the fact that there were only 62 deaths from Typhoid in our population of just over 480,000 may not mean very much but when I remind my readers that in 1933 in England and Wales with a population of over 40 million there were only 222 deaths from the same cause then our figures assume rather more serious proportions. And if we were to add the Dysentery figures then they become more alarming still.

Going a little further and assuming a 10-15% mortality for Typhoid and a 10% for Dysentery we are faced with the fact that during the year there must have been 400 to 600 primary attacks of Typhoid and about 3,000 of Dysentery. It does not require much imagination to visualise the unnecessary suffering, not to mention the economic loss from invaliding these lost figures must entail.

I said unnecessary and I mean it. The remedy is known and it only requires a little determination and a little courage to apply that remedy.

Year after year both in my Annual reports and elsewhere I have had a good deal to say about the lax way in which food is allowed to be handled and I have pleaded for stricter control especially over hawkers. But it is a melancholy fact that we are no nearer real control than we were twenty years ago.

During the year, 5587 itinerant hawkers, merely on application and payment of a fee of one dollar, obtained permits to hawk food in the streets. In addition, 431 licences for fixed food stalls in certain specified streets were issued. It is not pretended that the holders of all of these licenses are a danger as their peculiar wares in many cases might not readily carry infection. But there were 1664 cooked food, 1003 mixed drinks and 189 ice cream licences, the holders of all of which, were a potential danger. When it is realised that there is no control, perhaps no knowledge even, of the places where this food is prepared and that in all probability it is being done in many cases in an overcrowded coolie house with little or no kitchen accommodation and what little there is, in close proximity to an old fashioned pail closet, the air-well floor forming the common drainage for both, and when it is further realised that the hawkers on the streets have no washing up facilities and only a few

utensils with which to dispense the food to their scores of customers, then I think it must be admitted that the danger is not only potential but very real indeed.

During the year 1976 eating houses and coffee shops, housed in reasonably sanitary premises, were licensed by the Health Department.

Leaving out of count unlicensed hawkers of whom there are many, there is, then, a food hawker for every 80 of the population and a coffee shop or eating house for every 450. It must sound incredible to outsiders but there are still many who insist that this enormous number of hawkers is necessary!

At the slightest suggestion of stricter control or when the campaign against the unlicensed hawker is intensified, the press is immediately filled with inspired articles inveighing against the bureaucratic methods of municipal executive officers and Police. The hardships of the ignorant innocent hawker are magnified out of all semblance of fact and truth remains at the bottom of the well. As a matter of fact the really poor decrepit hawker is few and far between. There are hundreds of able bodied persons engaged in the trade. It is lucrative and easy and while they can get the responsible but misguided backing which they always seem to be able to command, they will not lightly give it up. And the rubber estates of the F.M.S. and Johore are short-handed and calling out for labour!

Meanwhile the story goes on as it has done for 20 years—hundreds of prosecutions and convictions with hundreds of petty and entirely inadequate fines. It is little short of a farce and produces no practical result except the almost justified resentment shown by the delinquent himself at a form of persecution which he cannot possibly appreciate or understand.

Once again I repeat that there is only one way to control this traffic and that is to have the absolute power to put the unlicensed hawker out of business almost before he starts. Then and only then will it be worth while to frame rules for the few licensed hawkers that may be found necessary. Their licences can be cancelled for any infringement of the rules laid down for their guidance—then they will share the fate of the unlicensed.

The present legislation and, I much regret to say it, the method of its administration have proved entirely useless. And unless and until some stronger legislation can be granted, I do not think that any improvement can be effected.

TUBERCULOSIS.

There were 960 notifications of this disease but 1,253 deaths from the same cause were recorded. This represents 12.33% of all deaths. The corresponding figure for 1933 was 12.66%.

Of the 1,253 deaths, 1,136 were due to Tuberculosis of the lungs (Phthisis).

During the year, for several reasons, but perhaps chiefly on account of the publicity given to the action of the Improvement Trust in 1933 in declaring a large block of slum property insanitary and unfit for habitation, a good deal of attention was focussed on the ravages of this disease and there were welcome, if faint, signs of an awakening sense of our civic duty in regard to it.

A word of explanation will not be out of place at this point. It would appear from both what has been written and said on this subject that there is, in the lay mind at least, an erroneous impression that the number of deaths from Tuberculosis is yearly increasing. And perhaps I am myself partly to blame for this because in previous annual reports I have confined my remarks under this heading to the fact that Tuberculosis is a Preventible disease, that it is year after year taking an unnecessarily large toll of our population and that the campaign against the congested areas and slums, where almost alone it is fostered and spread, is too half hearted and must be intensified. That of course is the Public health side of the question and I make no excuse for having emphasised it.

It cannot be denied, however, that in the past quarter of a century there has been a big decrease in the absolute number of cases, and a much greater decrease in the relative number which is only apparent when the deaths are shown calculated on the number of people living, as against the usual practice of showing the deaths from this cause as a proportion of the total deaths. To illustrate, I put up in the following table the deaths from Phthisis shown as a rate per million living, for the Census years from 1911 onwards. It will be remembered that in 1926 a Municipal Census was taken hence the inclusion of this particular year.

Year	Population.	Phthisis deaths.	Deaths per million living.
1911	259,610	1,603	6,174
1921	351,461	1,664	4,733
1926	408,273	1,294	3,169
1931	445,719	1,262	2,831

The very pronounced decrease in mortality from Phthisis is immediately apparent.

It would be extremely unwise, however, no matter how tempting to do so, to accept these figures at their face value—for the following reason. In Singapore town, there are still about 30% of the people who die who are not seen in life by a medical man during their last illness. The causes of death in these cases are certified by special officers attached to the Births and Deaths department, on a “view” only. They arrive at a diagnosis after hearing the history of the illness from relatives and friends of the deceased and under the circumstances, must perforce take a good deal for granted. It is possible that many deaths are labelled Pneumonia which are in reality Phthisis. And of course, to a certain extent, the converse must hold good.

However, considered from a broad aspect, and in relation to the part played by the Slums in the mortality from both diseases, the fact of this possibly faulty certification is not so very important. If overcrowding

in the Slums is responsible for the spread of Phthisis it is equally responsible in this country for the spread of Pneumonia. Whatever the error in each group, the error as a whole is not likely to be a large one and the case against the Slums will in no way be weakened by taking these two great causes of mortality together. That I now do in a similar table to the first, but showing in addition the figures for Pneumonia.

Deaths per million living.

Year	Population	Phthisis deaths	Pneumonia deaths	Total	Phthisis	Pneumonia	Total
1911.	259,610	1,603	873	2,476	6,174	3,362	9,536
1921	351,461	1,664	1,271	2,935	4,733	3,617	8,350
1926	408,273	1,294	1,843	3,137	3,169	4,514	7,683
1931	445,719	1,262	1,525	2,787	2,831	3,421	6,253

This presents by no means so rosy a picture as the first table. But it is still one from which we can derive a good deal of satisfaction, as it does show that in the period under review there has been a marked decrease in the absolute number of deaths from these two diseases.

There are of course many reasons which can be advanced for this reduction and doubtless arguments can be put forward in support of the claim for some particular reason having operated specially to bring about this desirable result, but personally I do not think there is much doubt but that this improvement is only the natural corollary of the amelioration of social conditions and the higher standard of hygienic living all round that the increased scientific knowledge of the last twenty years has brought in its wake. Opening up back-lanes and admitting light and ventilation to the old back to back houses and improved new housing have undoubtedly played their part. But I daresay there are as many occupying dark windowless cubicles today as there were quarter of a century ago, so that I feel we must look for part at least of the causation for the improvement elsewhere. And I am confident we shall find it in our pure water supply, expanding water carriage sewage system, improved drainage and town cleansing, improved food supplies and in short all those factors that have gone in recent years to bring about improved living conditions, to build up our immunity and generally to strengthen our resistance to all diseases.

But while I admit freely as above, that the Phthisis and Pneumonia figures show a big improvement over those of twenty years ago, I submit they are not yet such that we are entitled to congratulate ourselves unduly. There is no justification for the slightest relaxation of our efforts—for much yet remains to be done. In England and Wales for 1,933 Phthisis and Pneumonia accounted for 1,435 deaths per million living. In Sheffield which offers perhaps a fairer comparison, the figure for the same year was 1,551. Singapore with its figure of 4,919 for 1934 has still a long way to go.

DIPHTHERIA.

254 cases were notified as against 244 in 1933 and an average of 77.6 for the previous ten years.

(8-D)

That there is still a regrettable tendency on the part of parents to take this affection rather lightly is evident from the fact that the records of Middleton Hospital show that out of 152 admissions for Diphtheria for the year, 53 were laryngeal in type and 35 required immediate tracheotomy.

The practice was continued of taking throat swabs in cases of deaths of children under ten who had not been seen in life by a medical man. Of 748 such swabs, 11 only were returned as positive.

None of the other infectious diseases call for any special comment.

GENERAL.

1. Medical Inspection of Passengers.

47 premises to land were granted to 53 persons, 4 of whom failed to report.

2. Disinfection of infected articles.

691 articles were disinfected. The steam disinfecter was used on eleven occasions only.

3. Houses quarantined and disinfected.

2 houses were quarantined. 928 houses (513 Phthisis cases) were disinfected. 2 plank and attap butts, which could not be effectively disinfected, were burned.

4. Infected persons and contacts.

382 patients were removed to Middleton Hospital. 43 bodies were buried under supervision and 27 contacts were sent to St. John's Quarantine Station.

II. MIDDLETON HOSPITAL.

At the end of the previous year, there were 41 patients remaining in hospital while during the year under review there were 930 admissions making a total treated of 971. Of these, 868 were discharged, 61 died, while 42 remained in hospital at the end of the year.

Dr. Thurai's report is appended.

III. VACCINATION.

The following vaccinations were reported:—

	Successful	Modified	Failed	Not Seen	TOTAL
Municipal Vaccinators ..	11,437	1	14	69	11,521
Private Vaccinators ..	583	—	—	—	583
Medicalmen	2,248	—	10	—	2,258
Total ..	14,268	1	24	69	14,362

(9-D)

Of the total number of 11,521 vaccinations performed by the Municipal Vaccinators, 99% of those seen for the second time were found to be successful.

The nationalities of those vaccinated by Municipal Vaccinators were Europeans 7, Eurasians 127, Chinese 9421, Malays 1056, Indians 684, and Others 226. Of these, 5,881 were males and 5,638 females of the following ages:—

Under 1 year	...	...	...	...	10,542
1 to 2 years	..	..	..	..	191
3 to 5 years	..	..	..	..	275
6 to 10 years	..	..	..	..	162
11 to 20 years	..	..	..	..	97
Over 20 years	..	..	..	..	254
					<hr/>
Total				..	11,521
					<hr/>

8,726 vaccinations were performed at our depôts, 1,959 at Police Stations, 493 in the Child Welfare Clinics and 343 in private houses.

Of the above, 219 were contacts.

VITAL STATISTICS.

The following statistics are calculated on an estimated mean annual population of 484,963 made up as follows:—

			Male	Female	Total
Europeans	..	..	4,310	2,597	6,907
Eurasians	..	..	3,078	3,399	6,477
Chinese	..	..	228,991	144,864	373,855
Malays	..	..	24,867	21,352	46,219
Indians	..	..	35,578	7,870	43,448
Others	..	..	4,580	3,477	8,057
			<hr/>	<hr/>	<hr/>
Total		...	301,404	183,559	484,963
			<hr/>	<hr/>	<hr/>

This mean annual population was arrived at by simply adding the excess of births over deaths in 1933 to the estimated population for that year.

I have discussed fully in previous reports the extreme difficulty in a “clearing” port like Singapore in arriving at an estimate of population for intercensal years, and I came to the conclusion the above method is perhaps as safe as any. So that there is no purpose in labouring the point further. It is to be hoped, however, that the Commissioners will authorise a quinquennial census in 1936 as was done in 1926.

The following return gives the population, the number and rates per 1,000 births, infantile deaths and deaths at all ages for the past 10 years:—

Year	Population	Births		Infantile deaths		Deaths at all ages	
		No.	Rate	No.	Rate	No.	Rate
1924 ..	384,758	11,757	30.55	2,614	222.3	10,420	27.08
1925 ..	396,341	12,363	31.19	2,600	210.3	11,184	28.21
1926 ..	408,273	12,871	31.52	2,987	232.0	13,085	32.04
1927 ..	428,153	14,152	33.05	3,221	227.6	14,165	33.08
1928 ..	442,454	15,540	35.12	3,142	202.1	12,584	28.44
1929 ..	479,723	17,551	36.58	3,467	197.5	12,576	26.21
1930 ..	495,818	17,702	35.70	3,877	219.0	13,748	27.73
1931 ..	445,719	16,488	36.99	3,369	204.3	11,233	25.20
1932 ..	470,271	16,589	35.28	2,994	180.5	9,480	20.12
1933 ..	477,380	16,881	35.36	2,980	176.5	9,387	19.66
Average for 10 years ..	442,889	15,189	34.13	3,125	207.2	11,786	26.77
1934 ..	484,963	17,329	35.73	3,107	179.3	10,162	20.95

I. BIRTHS.

The total nummber of births registered during the year was 17,329 compared with 16,881 in 1933 and 16,589 in 1932.

There were 9,052 male and 8,277 female births.

The crude birth rate was 35.73 per mille as compared with 35.36 in 1933 and 35.28 in 1932.

The following return gives the number of births and the birth rate for each month of the year:—

Month	Births	Birth Rate	Month	Births	Birth Rate
January ...	1,375	33.41	July ...	1,471	35.76
February ...	1,187	31.93	August ...	1,400	34.01
March ...	1,305	31.71	September ...	1,497	37.58
April ...	1,442	36.20	October ...	1,600	38.87
May ...	1,375	33.41	November ...	1,676	42.08
June ...	1,390	34.90	December ...	1,611	39.14

The following return shows the number of births for each nationality:—

				Males	Females	Total
Europeans	...	...	...	100	84	184
Eurasians	...	...	...	88	104	192
Chinese	...	...	...	7,271	6,575	13,846
Malays	...	...	...	905	821	1,726
Indians	...	...	...	581	575	1,156
Others	...	...	...	107	118	225
Total				9,052	8,277	17,329

There were 473 still births compared with 431 in 1933 and 467 in 1932.

II. DEATHS.

The total number of deaths for the year was 10,162 and the death rate 20.95 per 1,000 compared with 19.66 in 1933 and 20.12 in 1932.

222 persons died who had been less than 3 months resident in Singapore. Deducting these the death rate is reduced to 20.50.

The excess of births over deaths was 7,167.

The following return shows the number of deaths and the death rate for each month of the year:—

Month	Deaths	Death Rate	Month	Deaths	Death Rate
January	847	20.58	July	903	21.94
February	744	20.01	August	845	20.53
March	789	19.17	September	889	22.32
April	764	19.18	October	836	20.31
May	866	21.04	November	934	23.45
June	802	20.13	December	943	22.91

(12-D)

The death rate for the different nationalities were:—

	1934			1933		
	Males	Females	Total	Males	Females	Total
Europeans ...	6.96	5.78	6.52	9.05	3.27	6.92
Eurasians ...	18.19	17.95	18.06	12.76	13.20	12.99
Chinese ...	21.24	20.97	21.13	21.05	20.29	20.76
Malays ...	25.70	25.90	25.90	23.82	23.97	23.89
Indians ...	15.52	28.97	17.95	12.91	27.78	15.43
Others ...	16.37	14.96	15.76	14.25	12.30	13.42
Total ...	20.29	21.50	20.95	19.94	20.51	20.12

The following return gives the number of deaths from each cause of disease, by nationality, age and sex. The classification followed is that of the 1931 International List:—

I. Infectious and Parasitic Diseases.		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals		
			M		F		M		F		M		F		M		F		M		F		M		F		M			F	
1. Typhoid Fever.		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Paratyphoid Fevers.		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6. Small-pox.		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7. Measles.		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9. Whooping Cough.		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10. Diphtheria.		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11. Influenza.		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11a. With respiratory complications.	(1) With pneumonic complications.	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11b. Without respiratory complications.	(1) With non-respiratory complications.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		2	...	6	7	27	17	9	15	5	9	7	2	9	4	15	5	10	1	3	4	...	2	...	...	93	66	159		

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

(14-D)

I. Infectious and Parasitic Diseases—(contd.)		Nationality	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals			
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F				
13. Dysentery.	13a. Amoebic.	Brought forward	2	...	6	7	27	17	9	15	5	9	7	2	9	4	15	5	10	1	3	4	...	...	...	...	93	66	159			
		(2) Without stated complications.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	1	...	1	3	5	5	...	2	...	1	1	2	3	...	5	6	1	1	2	6	1	2	...	...	25	26	37	39	...	
		Chinese	...	2	3	3	4	4	1	3	2	4	3	2	2	2	3	10	6	7	3	3	4	2	2	...	...	16	4	...		
15. Erysipelas.	13b. Bacillary.	Malays	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	2	2	1	1	...	1	...	...	1	2	...	2	4	7	4	19	3	13	10	...	...	46	28	2	...	
16. Acute Poliomyelitis.	13c. Other or Unspecified.	Chinese	...	...	1	3	1	3	2	...	1	...	2	2	2	2	2	7	18	7	36	4	18	9	...	...	...	...	89	34	...	
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	1	1	1	1	...	...	...	...	...	5	4	...	...
		Indians	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	2	1	...	2	1	...	...	...	...	...	5	3	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17. Encephalitis lethargica.	(1) Acute poliomyelitis.	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(2) Acute polioencephalitis	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
	Malays	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward	Carried forward	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Totals	Grand Totals	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

I. Infectious and Parasitic Diseases—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
18. Cerebro-spinal Fever.	Brought forward	...	3	3	14	17	44	34	14	22	8	17	17	10	21	15	57	34	54	26	87	21	54	34	...	...	373	233	606
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22. Tetanus.	Brought forward	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	100	94	2	...	...	1	1	1	1	...	1	...	1	...	2	...	...	...	...	5	...	...	...	...	113	96	6
		Malays	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
23. Tuberculosis of the respiratory system.	Brought forward	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	1	3	5	3	2	4	1	1	1	3	43	16	177	73	156	56	183	42	92	22	...	...	10	3	...
		Malays	671	223
24. Tuberculosis of the central nervous system.	Brought forward	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25. Tuberculosis of intestines and peritoneum.	Brought forward	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	1	2	7	6	16	11	3	3	1	...	1	...	1	...	2	...	...	...	...	1	...	...	...	...	...	...	...
		Malays	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26. Tuberculosis of vertebral column.	Brought forward	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	1	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27. Tuberculosis of other bones and joints.	Brought forward	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29. Tuberculosis of lymphatic system (abdominal and bronchial glands excepted).	Brought forward	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...</

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

I. Infectious and Parasitic Diseases—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
30. Tuberculosis of genito-urinary system.		<i>Brought forward</i>	106	101	26	32	68	50	23	34	11	24	34	18	84	45	300	130	252	97	318	77	164	59	...	...	1386	667	2053
		
		
		
		
32. Disseminated tuberculosis.	(a) Acute.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
33. Leprosy.	(b) Chronic.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
34. Syphilis.	(a) Congenital Syphilis.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
35. Other Venereal diseases.	(1) Gonorrhoeal or purulent ophthalmia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
<i>Carried forward</i>		142	156	39	49	75	59	26	36	11	28	36	19	85	46	314	136	277	104	367	85	180	60	...	...	1552	778	2330	

I. Infectious and Parasite Diseases—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals							
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F								
36. Purulent infection, Septicæmia.	(a) Septicæmia.	<i>Brought forward</i>																																		
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	6	1	3	6	5	1	1	1	...	1	...	...	1	...	2	2	4	2	4	2	3	1	...	...	29	17	...							
Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	...	4	1	...	...						
Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans	(b) Pyæmia.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	2	...	...				
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...			
Europeans	(c) Gas gangrene.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans	38. Malaria.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans	39. Other diseases due to protozoa.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans	40. Ankylostomiasis.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans	42. Other diseases due to helminths.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans	43. Mycoses.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	(1) Actinomycosis.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europeans		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eurasians		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chinese		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malays		...	...	...	...	...	...	...	...	...	...															

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

[illegible]

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

[illegible]

III. Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases.—(contd.)			Nationality.		Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
69. Other general Diseases.	(2) Other diseases included under 69.	Brought forward	155	164	61	67	108	85	46	54	23	44	58	31	159	74	490	234	472	216	592	164	303	143	...	...	2467	1276	3743			
		
		
		
		
IV. Diseases of the Blood and Blood-Forming Organs.																																
70. Haemorrhagic conditions.	(a) Purpura.	Europeans Eurasians Chinese Malays Indians Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
71. Anaemia, chlorosis.	(b) Haemophilia.	Europeans Eurasians Chinese Malays Indians Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
	(a) Pernicious anaemia	Europeans Eurasians Chinese Malays Indians Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
	(a) Other anaemias and chlorosis.	Europeans Eurasians Chinese Malays Indians Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
	(b) Other anaemias and chlorosis.	Europeans Eurasians Chinese Malays Indians Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
	(1) Splenic anaemia.	Europeans Eurasians Chinese Malays Indians Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
	(2) Other diseases included under 71b.	Europeans Eurasians Chinese Malays Indians Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		
		
		
		
Carried forward			158	168	63	71	111	87	46	55	23	44	60	32	160	75	495	240	479	219	596	166	306	143	...	...	2497	1300	3797			

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

[illegible]

VI. Diseases of the Nervous System and Sense Organs—(contd.)		Nationality.	Under 3 Months												1 to 5 Years												5 to 10 Years				10 to 15 Years				15 to 20 Years				20 to 25 Years				25 to 35 Years				35 to 45 Years				45 to 55 Years				Over 55				Unknown		TOTAL		Grand Totals
			3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL																																						
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F																															
89. Diseases of the ear and of the mastoid sinus.	(b) Neuritis, Neuralgia.	Brought forward		358	313	251	224	195	162	47	57	25	44	60	33	160	77	504	247	506	224	618	176	342	168	...	...	3067	1725	4792																															
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	(c) Paralysis agitans.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		Chinese																														
(d) Disseminated Sclerosis.	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(e) Other diseases included under 87.	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(a) Otitis and other diseases of the ear.	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(b) Diseases of the mastoid sinus.	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
90. Pericarditis (heart).	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Carried forward	...	359	313	251	225	196	162	47	57	25	44	61	33	162	82	507	259	509	231	621	177	346	168	...	...	3084	1751	4835																																

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

VII. Diseases of the Circulatory System.—(contd.)			Nationality.		Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
91. Acute endocarditis (heart).	(1) Malignant endocarditis.	Brought forward ..	359	313	251	225	196	162	47	57	25	44	61	33	162	82	507	259	509	231	621	177	346	168	...	...	3084	1751	4835			
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Other acute endocarditis.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
92. Chronic endocarditis, Valvular disease (heart).	(1) Aortic valve disease.	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Mitral valve disease.	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(4) Endocarditis not returned as acute or chronic.	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(5) Other or unspecified valve disease.	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
93. Diseases of the myocardium.	(a) Acute myocarditis.	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(b) Myocardial degeneration.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward ..			359	313	251	225	197	162	49	59	26	47	62	34	167	87	526	272	549	239	655	200	409	209	...	...	3250	1847	5097			

VII. Diseases of the Circulatory System--(contd.)										Nationality.		Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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94. Diseases of the coronary arteries, angina pectoris.	(b) Myocardial degeneration.	Brought forward										359	313	251	225	197	162	49	59	26	47	62	34	167	87	526	272	549	239	655	200	409	209	3250	1847	5097																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		(2) Cardiovascular degeneration.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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	(c) Myocarditis not distinguished as acute or chronic.	Malays																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		Indians									

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

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VII. Diseases of the Circulatory System—(contd.)		Nationality.	Under 3 Months												3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals
			Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL												
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F									
103. Other diseases of the circulatory system.	Brought forward	359	313	251	225	193	166	50	59	26	47	64	34	169	90	541	286	581	249	725	216	490	239	...	...	3454	1924	5378									
								
								
								
								
							
VIII. Diseases of the Respiratory System.																																							
104. Diseases of the nasal fossae and annexa.	(2) Diseases of the accessory nasal sinuses.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								
								
								
								
105. Diseases of the larynx.	(2) Laryngitis.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								
								
								
								
106. Bronchitis.	(a) Acute bronchitis.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								
								
								
								
106. Bronchitis.	(b) Chronic bronchitis.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								
								
								
								
107. Broncho-pneumonia.	(c) Bronchitis not distinguished as acute or chronic.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
								
								
								
								
Carried forward	485	409	492	424	372	308	78	103	33	59	69	38	176	96	551	297	595	255	746	221	526	265	4123	2480	6603												

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[illegible]

VIII. Diseases of the Respiratory System—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
114. Other diseases of the respiratory system.	Brought forward	..	489	412	515	440	397	322	83	113	36	62	77	46	216	105	603	333	662	282	811	238	565	288	...	...	4454	2641	7095
		(b) Other diseases included under 114.	Europeans
			Eurasians
			Chinese
			Malays
	(1) Gangrene of the lung.
			Eurasians
			Chinese
			Malays
			Indians
(2) Other diseases included under 114b.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
IX. Diseases of the Digestive System.																														
115. Diseases of the buccal cavity pharynx, etc.	(1) Diseases of the teeth and gums.	Europeans
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(2) Ludwig's angina.
			Eurasians
			Eurasians
			Chinese
			Malays
(3) Diseases of the tonsils.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
116. Diseases of the oesophagus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward		..	490	413	515	443	399	322	83	114	36	64	77	46	218	106	607	334	668	283	817	238	567	290	...	...	4477	2653	7130

IX. Diseases of the Digestive System—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals		
			M		F		M		F		M		F		M		F		M		F		M		F		M			F	
123. Other diseases of the intestines.	(b) Intestinal obstruction.	Brought forward	659	509	681	596	520	392	96	124	37	66	82	48	220	106	619	344	686	294	836	241	584	301	...	...	5020	3021	8041	
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
124. Cirrhosis of the liver.	(b) Not returned as alcoholic.	Indians	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
125. Other diseases of the liver.	(2) Other diseases included under 125.	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
127. Other diseases of the gall bladder and ducts.	(1) Cholecystitis without record of biliary calculi.	Chinese	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
128. Diseases of the pancreas.		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
129. Peritonitis without stated cause.		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward			661	512	686	596	522	392	96	124	40	66	84	48	223	110	646	346	725	300	872	245	605	303	5160	3045	8205		

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X. Non-Venereal Diseases of the Genito-Urinary System and Annexa.		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals	
																											M	F		
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F				
130. Acute nephritis.		Brought forward ..	661	512	686	596	522	392	96	124	40	66	84	48	223	110	646	346	725	300	872	245	605	306	...	...	5160	3045	8205
		Europeans	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
131. Chronic nephritis.		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
132. Nephritis not stated to be acute or chronic.		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
133. Other diseases of the kidney and annexa.	(a) Pyelitis.	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
134. Calculi of the urinary passages.	(b) Other diseases included under 133.	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
135. Diseases of the bladder.	(a) Calculi of kidney and ureter.	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
135. Diseases of the bladder.	(b) Calculi of the bladder.	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
135. Diseases of the bladder.	(a) Cystitis.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward ..			663	514	692	601	532	396	106	126	45	70	86	55	231	116	677	379	765	329	934	279	706	373	...	...	5437	3238	8675

X. Non-Venereal Diseases of the Genito-Urinary System and Annexa—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals		
			M		F		M		F		M		F		M		F		M		F		M		F		M			F	
136. Diseases of the urethra, urinary abscess, etc.	(b) Other diseases of the bladder.	Carried forward	663	514	692	601	532	396	106	126	45	70	86	55	231	116	677	379	765	329	934	279	706	373	...	...	5437	3238	8675	
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
137. Diseases of the prostate.	(a) Stricture of the urethra.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
138. Diseases of the female genital organs.	(b) Other diseases of the urethra, etc.	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
139. Diseases of the female genital organs.	(a) Diseases of the ovary, Fallopian tube and para-metrium.	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
140. Diseases of the female genital organs.	(a) Diseases of the ovary, Fallopian tube and para-metrium.	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
141. Diseases of the female genital organs.	(d) Other diseases of the genital organs.	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brought forward			663	514	692	601	532	396	106	126	45	70	86	56	231	117	677	380	765	331	936	280	709	373	...	...	5442	3244	8686	

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

XI. Diseases of Pregnancy, Childbirth and the Puerperal State.		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
41. Abortion not returned as septic.	(1) Hæmorrhage following abortion.	Brought forward ..		663	514	692	601	532	396	106	126	45	70	86	56	231	117	677	380	765	331	936	280	709	373	...	...	5442	3244	8686
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42. Ectopic gestation.	(2) Without record of hæmorrhage.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
43. Other accidents of pregnancy.		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
44. Puerperal hæmorrhage.	(a) Placenta prævia.	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45. Puerperal sepsis.	(b) Other puerperal hæmorrhage.	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
46. Puerperal albuminuria and convulsion.	(a) Puerperal Septicæmia and pyæmia.	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
46. Puerperal albuminuria and convulsion.	(1) Puerperal convulsions.	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward ..			663	514	692	601	532	396	106	126	45	70	86	57	231	128	677	414	765	351	936	280	709	373	...	...	5442	3310	8752	

XI. Diseases of Pregnancy, Childbirth and the Puerperal State—(contd.)				Nationality.		Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals	
				M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
147. Other toxæmias of pregnancy.	(2) Other conditions included under 146.	<i>Brought forward</i>				663	514	692	601	532	396	106	126	45	70	86	57	231	128	677	414	765	351	936	280	709	373	...	...	5442	3310	8752
		Europeans				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
148. Puerperal phlegmasia alba dolens, and embolism and sudden death.	(a) Puerperal phlegmasia alba dolens not returned as septic.	Europeans				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
149. Other accidents of childbirth.		Europeans				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
150. Other or unspecified conditions of the puerperal state.	(3) Childbirth (unqualified).	Europeans				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians			
XII. Diseases of the Skin and Cellular Tissue.																																	
151. Carbuncle, Boil.		Europeans				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese			
		Malays			
		Indians			
152. Cellulitis, acute abscess	(1) Cellulitis.	Europeans				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians				...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese			
		Malays			
		Indians			
<i>Carried forward</i>				668	518	697	610	532	399	106	127	45	70	87	60	231	131	679	421	767	361	937	280	710	374	...	...	...	...	5459	3351	8810

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

[illegible]

XIV. Congenital Malformations—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
(b) Spina bifida and Meningocele.	Brought forward ..	Europeans</

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

[illegible]

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1933.

XVII. Deaths from Violence—(contd.)																												
Nationality.		Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
173. Homicide by firearms.	Brought forward ..	944	794	720	634	533	403	108	127	45	70	89	60	235	132	688	425	777	366	951	282	916	589	...	...	6006	3882	9888
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
174. Homicide by cutting or piercing instruments.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
175. Homicide by other means.	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
176. Attack by Venomous animals.	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
179. Other acute accidental poisoning (not by gas).	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181. Accidental burns (conflagration excepted).	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
182. Accidental mechanical suffocation.	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
183. Accidental drowning.	Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward ..	944	794	720	634	538	406	110	128	50	70	91	60	236	132	698	428	783	368	954	282	917	589	...	...	6041	3891	9932	

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

XVII. Deaths from Violence.—(contd.)		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals			
186. Accidental injury by fall.	Brought forward	..	944	794	720	634	538	406	110	128	50	70	91	60	236	132	698	428	783	368	954	282	917	589	...	...	6041	3891	9932			
		Europeans	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...		
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	1	...	2	2	2	2	1	...	5	...	9	4	13	1	13	3	9	1	...	...	...	55	13	...		
		Malays	...	...	...	...	...	...	2	...	...	...	...	...	2	...	2	...	1	...	...	...	...	...	...	...	...	8	1	...		
		Indians	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	9	1	1	...	3	...	...	...	...	...	16	2	...		
Others		...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	100			
187. Cataclysm.		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	2	
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
188. Injury by animals (poisoning by Venomous animals excepted).		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
191. Excessive heat.		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others
193. Electricity (lightning excepted).		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others
(2) Other and un-stated forms of accidental violence.		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
195. Violent deaths of un-stated nature (i.e., accidental, suicidal, etc.)		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
198. Execution.		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			945	794	720	634	540	406	116	131	54	72	93	60	250	132	728	434	803	369	972	287	930	593	...	...	6151	3912	10063			

MORTALITY ACCORDING TO DISEASE, NATIONALITY, AGE AND SEX FOR THE YEAR, 1934.

XVIII. Ill-Defined Diseases.		Nationality.	Under 3 Months		3 to 12 Months		1 to 5 Years		5 to 10 Years		10 to 15 Years		15 to 20 Years		20 to 25 Years		25 to 35 Years		35 to 45 Years		45 to 55 Years		Over 55		Unknown		TOTAL		Grand Totals		
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		M	F
199. Sudden death.	Brought forward ..	..	945	794	720	634	540	406	116	131	54	72	93	60	250	132	728	434	803	369	972	287	930	593	...	...	6151	3912	10063	
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200. Cause of death unstated or ill-defined.		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Chinese	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(2) Other ill-defined causes.		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Eurasians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(3) Causes not specified.		Chinese	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Malays	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Indians	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Europeans	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL			943	799	724	636	547	417	119	133	54	72	95	60	254	133	733	437	814	373	978	288	944	596	5	3	6215	3947	10162		

The following return shows the total number of deaths at different age periods in the different nationalities:—

Mortality According to Nationalities and Ages Period for the Year 1934.

Nationality	Sex	Under 3 months	3—12 months	1—5 years	5—10 years	10—20 years	20—25 years	25—35 years	35—45 years	45—55 years	Over 55 years	Unknown	TOTAL
Europeans	M	1	2	—	1	2	2	5	3	5	9	—	30 } 45
	F	1	1	1	1	—	1	1	2	—	7	—	
Eurasians	M	3	4	3	1	2	3	8	11	8	13	—	56 } 117
	F	7	7	5	3	4	—	3	4	1	27	—	
Chinese	M	742	569	462	104	106	177	517	645	802	738	1	4,863 } 7,701
	F	653	481	332	111	87	88	327	286	231	442	—	
Malays	M	146	106	52	7	20	26	68	59	54	101	—	639 } 1,192
	F	96	114	55	14	25	23	63	48	35	80	—	
Indians	M	52	37	26	5	17	44	123	84	96	68	—	552 } 780
	F	39	26	19	4	14	18	40	20	14	34	—	
Others	M	4	6	4	1	2	2	12	12	13	15	4	75 } 127
	F	3	7	5	—	2	3	3	13	7	6	3	
Total	M	948	724	547	119	149	254	733	814	978	944	5	6,215 } 10,162
	F	799	636	417	133	132	133	437	373	288	596	3	
Grand Total	..	1,747	1,360	964	252	281	387	1,170	1,187	1,266	1,540	8	10,162

GENERAL DEATH RATE.

The crude death rate was 20.95 per 1,000 living compared with 19.66 in 1933 and 20.12 in 1932.

It will be remembered that the death rate for 1933 was the lowest on record and in my annual report for that year I expressed the opinion that Singapore had reached a more or less standard death rate for the time being and that the somewhat spectacular improvement of the last twenty years could not be looked for in future. So that the somewhat increased rate for 1934, though disappointing, is not altogether unexpected.

There were signs during the year that as compared with 1933, the population may have been underestimated. At any rate there was a rise in the crude birth rate which may feasibly in this part of the world be taken to mean an increased number of women, and it is a fact that for the first time in three years was a plus balance of the immigration over the emigration figures for the country as a whole. If the population were so underestimated then the apparent increase in the death rate would be accounted for in part at least. But to tell the truth I think this possibility much too speculative and hardly worth exploring.

The main causes of death are shown in the following table, the 1933 figures being given for comparison. To bring out that comparison more clearly, I also show the rates per 1,000 living for each disease.

	1934	Rate per mille	1933	Rate per mille
Pneumonia & Bronchitis ...	1,632	3.365	1,644	3.443
Tuberculosis ...	1,253	2.583	1,189	2.490
Infantile Convulsions (up to 5 years) ...	823	1.697	733	1.535
Diarrhoea & Enteritis ...	699	1.441	656	1.374
Diseases of Early Infancy	564	1.162	584	1.223
Beri-Beri ...	538	1.109	434	.909
Malaria ...	413	.851	366	.766
Dysenteries ...	286	.589	325	.680

Though the totals for 1934 show an absolute increase of approximately 170 over the 1933 figure, with the possible exception of Infantile Convulsions and Beri-beri, there is nothing particularly outstanding about any single cause of death. The increased deaths from Convulsions was confined to infants under one year which is rather difficult to explain. So too with the increased Beri-beri deaths in a year when the standard of living definitely improved and poverty was much less evident.

There was quite an appreciable increase in the Malaria deaths but these in turn were offset by the decreased Dysentery deaths. In any case so far as Singapore town is concerned the Malarial deaths are not of prime importance as all the evidence went to prove, as in previous years, that at the most not more than 10% to 20% could be debited to Singapore.

Of Group causes of death there was, to me, a quite unaccountable absolute increase in the number of deaths from Diseases of the Circulation. Whereas in 1933 Chronic Endocarditis (Valvular Disease) was responsible for 163 deaths or .341 per mille living, in 1934 the same cause was responsible for 237 deaths or .488 per mille. Under another sub head in this Group, Myocarditis, there were in 1933 a total of 79 deaths or .165 per mille against 136 deaths or .280 per mille in 1934. This is an absolute increase for the two of .262 per mille or approximately 125 deaths. I will not pretend to explain this but it seems to me that the increase is so great that it is hardly possible to describe it as accidental.

INFANTILE DEATH RATE.

This was 179.3 per 1,000 live births. The rates in 1933 and 1932 were 176.5 and 180.2 respectively.

The total number of deaths of infants was 3,107 in 17,329 live births, the corresponding figures for 1933 being 2,980 in 16,881. The chief causes of death are tabulated below, the 1933 figures being given for comparison. The rates per 1,000 live births are also shown.

	1934	Rate per 1,000	1933	Rate per 1,000
Bronchitis & Pneumonia ...	704	40.6	783	46.3
Infantile Convulsions ...	769	44.3	610	36.1
Diseases of Early Infancy	561	32.3	578	34.2
Diarrhoea & Enteritis ...	482	27.8	471	27.9
Tetanus ...	199	11.4	186	11.0
Syphilis ...	118	6.8	104	6.1
	<hr/> 2,833 <hr/>		<hr/> 2,732 <hr/>	

The infantile death rate of 176.5 in 1933, like the crude death rate in the same year, was a low record. The increase of 2.8 per 1,000 in 1934 over that figure is very small but it is interesting to see whether it is general or due to any particular cause. A little light is thrown on it when the infantile rates by nationalities are shown as I do in the following table. The 1933 rates are shown for comparison—also the total number of births and deaths for further clarity.

		1934			1933		
		Births	Deaths	Rate	Births	Deaths	Rate
Europeans	...	184	5	27.1	182	6	32.9
Eurasians	...	192	21	109.3	148	18	121.6
Chinese	...	13,846	2,445	176.5	13,460	2,370	176.0
Malays	...	1,726	462	276.6	1,687	415	245.9
Indians	...	1,156	154	133.2	1,167	150	128.5
Others	...	225	20	88.8	237	21	88.6

Leaving Europeans, Eurasians and Others out of count as the figures are so small it will be seen that the Chinese rate remained practically the same while there was an increase of 4.7 per 1,000 in the Indian rate but an increase of 21.7 in the Malays. This last almost alone accounts for the extra deaths.

On referring to the previous table we find there is a big absolute increase in the number of deaths from Infantile Convulsions and on further reference to the detailed tables it will be found that an undue proportion of this increase was in Malay infants. Whereas in 1933 only 172 Malay infants were so certified, the figure in 1934 rose to 220. This constitutes an absolute increase of approximately 45.

Where a vague term like Convulsions is concerned and when it is remembered that out of the total of 220 the Inspecting Officers certified no fewer than 191 on a view only, it would be idle to speculate on the possible reasons for this increase.

None of the other causes of Infantile mortality call for any special comment. There were 199 deaths from tetanus recorded in infants. Every case of the disease of which the Infant Welfare Staff had knowledge, 57 in all, was carefully followed up and investigated. It is interesting to note that in every one of this series the mother had had no skilled attention of any kind at birth. Where possible a sample of the "medicine" used in dressing the cord was obtained and sent to the Bacteriologist for examination. From one of these, out of a total of seven, a pure culture of the Tetanus bacillus was isolated!

The returns for Syphilis are, as usual, no indication of the real truth. The special investigations mentioned in my reports of the last two years was continued. It consists of a serological examination of the mothers of dead infants whose deaths have been certified by the Inspecting Officers. Due to shortness of staff it was not possible to do as many as one would have liked. Of 297 so examined 46 or 15.59% were serologically positive while 2 were doubtful or anti-complementary.

(48-D)

The cases were distributed according to the age of the child:—

	Still- births	1 hour to 3 months	3 months to 6 months	6 months to 9 months	9 months to 1 year	1 year
Positive ...	6	25	5	5	5	46
Negative ...	25	116	57	30	21	249
Percentage positive	19.35	17.73	8.07	14.3	19.23	15.59

And according to the nationality of the mothers:—

	Eurasians	Chinese	Malays	Indians
Positive ...	1	33	10	2
Negative ...	—	176	61	12
Percentage positive ...	100	15.74	14.08	14.28

From the time the investigation began until the end of 1934 a total of 1,276 mothers have been serologically tested with 224 or 17.65% positive, 1,045 negative, 4 doubtful and 3 anti-complementary.

The cases were distributed according to age of the child:—

	Still- births	1 hour to 3 months	3 months to 6 months	6 months to 9 months	9 months to 1 year	Total
Positive ...	50	101	38	15	20	224
Negative ...	149	513	179	110	94	1,045
Percentage positive	25.13	16.45	17.51	12.00	17.54	17.65

And according to the nationality of the mothers:—

	Eurasians	Chinese	Malays	Indians	Others	Total
Positive ...	2	139	62	19	2	224
Negative ...	2	726	243	72	2	1,049
Percentage positive	50.00	16.07	20.32	20.77	50.00	17.65

A parallel investigation was instituted at the same time in the Infant Welfare Clinics and was carried on during the year. It consists of a similar serological examination of mothers whose infants for no obvious reason are not thriving as they should. Fuller particulars of these will be found in the report of the Lady Medical Officer. Those who are interested in the details of the serological examinations are referred to the report of the Bacteriologist.

Between the registrar's series and the Clinic series we have now a record of well over 700 infected mothers. These would form a useful nucleus for an Ante Natal Clinic!

CERTIFICATION OF DEATHS.

The following return shows the number of deaths, the cause of which were certified by Medicalmen, Inspecting Registrars and the Coroner respectively:—

	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Medicalmen ...	36	97	5,351	329	473	100	6,386
Registrars ...	—	13	2,066	839	230	12	3,160
Coroner ...	9	7	484	24	77	15	616
Total ...	45	117	7,901	1,192	780	127	10,162

This gives a percentage of 62.8 certified by medicalmen as against 64.5 last year, 31.1 by Registrars as against 29.0 last year and 6.1 certified by the Coroner as against 6.5 last year.

The percentage for the 10 years have been as follows:—

	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Medicalmen	58.7	59.6	63.6	65.1	66.0	68.2	63.6	63.5	64.5	62.8
Registrars	33.9	34.1	30.1	28.9	29.1	28.4	31.6	29.6	29.0	31.1
Coroner	7.2	6.2	6.2	5.9	4.8	3.3	4.8	6.8	6.5	6.1

There were 17,329 births and 10,162 deaths registered at the Central Office. 27 births and 1 death were entered in the post registration book and the sum of \$198 was received in late registration fees.

VI & VII ANALYTICAL AND BACTERIOLOGICAL LABORATORIES.

Both reports are appended. I shall not attempt to synopsis them as it would serve no useful purpose. These laboratories are an integral part of the activities of the Health department generally and the reports should be read in full to appreciate the amount and the great value from a public health point of view of the work they put thorough in a year.

VIII ANTI MOSQUITO WORK.

Complete details will be found in Dr. Dawson's report which is appended.

New Works. No new areas were opened up but permanent drainage and extensions in existing areas were carried out involving the laying of approximately 1,980 yards of open concrete channels, 4,780 yards of concrete slab revetment, and 5,540 yards of subsoil pipes.

Maintenance. During the year 7 gangs of 20 men were constantly employed on maintenance of the existing areas, 2 gangs on minor works and repairs, and 2 gangs on Patrol work in the Katong and Siglap areas.

The mosquito trap was in use in the Katong Area on 33 nights during the year. Of the adult mosquitoes caught 478 were dissected and one *Anopheles sundaicus* (Ludlowi) was found infected with malaria.

21,998 gallons of Anti-malarial mixture were sprayed during the year chiefly in the Kallang and Geylang Basins.

The total amount spent on all anti-mosquito work during the year was \$57,387 against \$52,018 in 1933.

The somewhat unusual activity in the Kallang—Katong area was due to the possibility of the operations of filling and reclamation for the new Aerodrome causing some disturbance of the known *Anopheles sundaicus* (Ludlowi) breeding places or even creating fresh ones. There was, perhaps, toward the end of the year rather more mosquito breeding than usual, and possibly a slight increase in the number of cases of malaria reported from the district generally, but at no time was any sign of anything approaching epidemic form. A close and cordial cooperation was maintained at all times with the responsible authorities at the Aerodrome.

While on this subject or rather district, I would ask the Commissioners to consider seriously the possibility of the permanent filling of the swamp land lying to the north of Grove Road. A good deal of unavoidable ludlowi breeding takes place here which will always be a possible source of danger.

With the facilities for reclaiming the Aerodrome site, and especially the Railway track, available, it will never be possible to do this more economically than now and I think the time is ripe to make strong representations to the owners of all the land involved. The result would be the creation of very valuable sites for light industry and housing in close proximity to the Aerodrome, and, with the completion of the Aerodrome itself and its immediate environs at Tanjong Rhu, would remove for all time the danger of malaria amongst the inhabitants of a very wide district.

And a third desideratum will be attained. It is one which is perhaps at present of little moment but it is bound to become more and more important in the future. I refer to the fact that the new Aerodrome will in all probability be a "Sanitary" Aerodrome i.e. it will most likely be declared the first port of entry into this country for all aeroplanes from "infected" countries and especially those infected with Yellow Fever. It is quite on the cards that subsequent international Sanitary Conventions for Aerial navigation will insist that Sanitary Aerodromes and their immediate surroundings should be as free from all mosquito breeding as it is humanly possible to make them.

IX SUPERVISION OF MIDWIVES & INFANT WELFARE.

The report of the Lady Medical Officer is appended and should be read in its entirety. It is a careful record of the activities of a branch of the Health department which, though comparatively young, is becoming progressively useful and important.

The District Staff, who are more concerned with the supervision of midwives, paid a total of 22,651 visits to 14,591 mothers.

Of these mothers 11,311 were reported to be living in cubicles or single rooms.

3,792 mothers had no skilled attention at birth. This figure is disappointingly large. For some reason the mothers are very slow to take advantage of the free services of the qualified midwives attached to the Clinics. Dr. Clark explains it in part by the difficulties of transport but that this is not the complete explanation is evidenced by the fact that 1,253 of those mothers lived comparatively close to the Clinics.

14,744 infants were taken on the Clinic registers while the Staff held 42,247 consultations in the Clinics and paid 110,982 visits in the homes.

Now that the financial situation is improved, there are two desirable extensions of Infant Welfare work that might receive consideration. The first is the question of giving a limited number of visits to children in the second year of life. In this country where so many babies are not weaned until they are well into their second year it would seem quite a logical extension and it would relieve the Child Welfare Society, which depends entirely on charitable support, of a certain amount of responsibility which they at present voluntarily undertake and allow them to concentrate their attention and resources on a very praiseworthy and useful purpose namely the provision and running of Creches.

The second extension is the provision of an Ante Natal Clinic. If it were to do nothing else but treat, in their subsequent pregnancies, the 700 Wassermann positive mothers already on our books, it would be of extreme value. I take this opportunity to reiterate my belief that no hospital or institution is so completely suitable and so "sympathetically" staffed for this purpose as are our own Infant Welfare Clinics. No possible stigma could attach to treatment there as there is always a "baby" as the excuse for attendance at the Clinics.

X. FOOD AND MARKETS.

The report of the Food and Market Inspector is appended:—

The total quantity of foodstuffs passing through the markets was less than that of the previous year, but the approximate value was increased. This was reflected in an increased revenue, the first increase for the past five years. Practically all the increased revenue was derived by way of the 5% Commission on the sale of fish. Though the quantity of fish remained substantially the same there was a marked rise in value especially in the latter half of the year.

78,345 catties of unsound foodstuffs mostly fish were seized or surrendered in the markets and 13,438 items in shops. They were all sent to the Incinerator and destroyed.

FOOD SHOPS ETC.

Licences were issued for:—

		1934	1933
Eating Houses	.. ..	857	806
Coffee Shops	.. ..	234	278
Soda Fountains	.. ..	54	54
Meat & Fish Shops	.. ..	141	145
Bakeries	.. ..	23	22
Cake Shops	.. ..	34	34
Biscuit factories	.. ..	4	4
Aerated Water Factories	.. ..	8	9
Milk Vendors	.. ..	207	154

All licensed premises were regularly inspected by the Sanitary Inspector of the district.

XI. PLACES OF PUBLIC RESORT.

Theatres, Hotels, Public Houses, Printing Presses etc. were regularly inspected at the request of the licencing authorities concerned, and the necessary reports were made.

XII. SLAUGHTER HOUSES.

During the year 289,798 animals were slaughtered in the Municipal Abattoirs. They were as follows, the 1933 figures being given for comparison:—

		1934.	1933.
Pigs	.. ..	234,034	210,249
Sheep	.. ..	35,540	32,927
Goats	.. ..	2,753	2,131
Oxen	.. ..	17,233	13,975
Buffaloes	.. ..	238	224
		<hr/>	<hr/>
		289,798	259,506
		<hr/>	<hr/>

949 carcasses were totally condemned, 866 being pigs, 24 sheep, 48 oxen, 6 goats and 5 buffaloes. Of the pigs, 331 were suffering from *Cysticercus Ceclulosae*, 275 from Pyrexia, 89 from Swine Fever and 30 from Tuberculosis. Of the oxen, 14 were suffering from *Cysticercus* and 14 from Tuberculosis.

There were evidences of tuberculosis in the carcasses of 1,549 pigs and 454 oxen.

With a view to introducing its use in the slaughtering of sheep, the "electrolethaler" was demonstrated to the leaders of the Mohammedan community but it failed to meet with their unanimous approval.

The revenues of the Abattoirs increased by about 14% on those for 1933 which may be taken as a measure of returning prosperity.

XIII. OFFENSIVE TRADES.

407 licences, 335 of them being for laundries, were issued during the year, the fees drawn being \$2,992.29. All the licensed premises were subject to frequent inspection.

XIV. BURIAL GROUNDS.

There were 7,625 burials inside municipal limits during the year, the nationalities being as follows:—

Europeans	..	..	..	56
Eurasians	..	..	.	127
Chinese	..	..	..	5,242
Malays	..	..	..	1,423
Indians	..	..	.	745
Others	..	..	..	32
				<hr/>
				7,625
				<hr/>

There were 54 exhumations during the year all carried out under the supervision of the special Inspector. This officer also paid 1,920 visits of inspection to non Municipal Cemeteries.

There were 115 cremations.

Of the total burials above, 5,929 took place in the six Municipal Cemeteries the remainder in the 16 Private and 11 Public Cemeteries still in use.

With regard to these latter non municipal burial grounds still in use, it should be noted that the figures are very much smaller than recorded in previous reports. There has always been a good deal of confusion with regard to these, owing to the fact that the records had been imperfectly kept in the past. Mr. Benjafield, Chief Sanitary Inspector, undertook the task of straightening things up and after many weeks of painstaking search has been able to get a little order out of chaos, and has completed a valuable permanent record of the position up to date. It now appears that there remain in use only 16 Private Cemeteries of which one is Malay and the remainder Chinese and 11 Public Cemeteries of which one is Jewish, one Parsee, two Malay and seven Chinese.

XV. STAFF.

Dr. Canton went on long leave in May and returned in December. Dr. Gilmour went on leave in November, when Dr. Thurai took charge of the Middleton Hospital in addition to his other duties. Mr. MacMahon went on leave in March and returned in October. Sister Stephens went on leave in June.

I much regret to record that Dr. John Gnanapragasam, Inspecting Officer, Births and Deaths department, died suddenly on 26th October. Dr. Lee Ee Kiam was appointed to fill the vacancy.

Probationary Sanitary Inspector Ting Siew Sau and Yzelman were seconded during the year to attend the course of the Royal Sanitary Institute. Both succeeded in obtaining the diploma taking first and sixth places respectively at the examination.

HEALTH OF MUNICIPAL SUBORDINATE STAFF.

The number of cases treated was 12,047. There were 421 sent to hospital and 162 to various clinics. 18,232 days sick leave were granted, 15,792 dressings were applied at the office dispensary where the daily attendance totalled 31,120.

Private Practitioners treated 327 cases while the Medical Officer in charge of staff paid 246 visits to patients in their homes.

Amongst the subordinate staff and labour force of approximately 8,000, the chief causes requiring treatment were Influenza (2,752), Pyrexias (1,950), Accidents and Injuries (1,493) and Inflammations, Septic Wounds & Ulcers (1,037).

XVI. GENERAL.

There were 2,828 notices including 605 intimations served during the year. 205 notices were brought forward from last year making a total of 3,033. Of these, 2,531 were complied with, 134 cancelled and 368 carried forward.

There were 42,583 visits of inspection paid by the Sanitary Inspectors. 1,393 prosecutions, 1,245 convictions with fines imposed amounting to \$5,902.42 while 68 prosecutions were withdrawn and 80 summonses could not be served.

INSANITARY KAMPONGS (VILLAGES).

During the year the senior staff gave a good deal of time to the problem of clearing up some of the worst of the insanitary Kampongs, which are still all too common, close into town.

These as a rule consist of a motley collection of dilapidated huts of plank and attap construction and built to no plan or layout. There are no proper roads or drains, a very primitive system of conservancy, if any, and a water supply which is usually drawn from a standpipe some distance away. In consequence of this last, water is stored in any kind of container with much resultant mosquito breeding. The huts are occupied by the very poor and are in consequence overcrowded. And generally the conditions in these villages for the easy spread of disease, especially epidemic disease, are about as favourable as it is possible to make them.

The creation and growth of these insanitary plague spots is favoured by a complexity of causes. One of the chief, to my mind, was the practice in the past of issuing "permits" for the erection of "temporary" houses without due regard to the real intention of the word "temporary" or for how long or in what manner these huts are intended to be occupied. Many of them to my knowledge have been in existence for over 20 years.

Permits are granted for one or two huts or even more. Very soon little additions and lean-tos are made to them. These in themselves seem to be unimportant—and little sympathy or help is extended to the Inspector who tries to have them demolished. But the final result in a few years' time may be that quite big areas are completely roofed over—with the eaves of individual huts almost touching.

As a general rule nothing short of complete demolition is of any value and even rebuilding on the site is impossible as in most instances the land is lowlying, undrained and altogether quite unsuitable for any kind of domestic dwelling.

In the past, the department has not met with much encouragement in its efforts to clean up. Perhaps because the inhabitants are very poor they meet with a larger need of sympathy than they otherwise might. One of the greatest difficulties with regard to them is that they definitely cannot afford the higher rentals of the more solidly built property in the heart of the town where they wish to live and their livelihood lies. They are, as a rule, not squatters but hawkers, and a low class of daily wage earners and artisans of sorts whose earnings are very small indeed. Naturally no private landlord thinks it is his duty to provide cheap housing for them. Nevertheless, it is surprising how easily they sometimes seem to be accommodated elsewhere when the law is enforced and those huts demolished. This was well illustrated only recently in the case of the insanitary Kampongs at Bukit Ho Swee and Beo Lane. That district was scheduled for action when the big fire, almost providentially it would seem, destroyed upwards of 200 huts in a few hours. Though about 2,000 persons were dishoused, they have already been absorbed without any apparent hardship.

I am glad, however, to report that our efforts in this direction have been rather more successful lately. Early in the year, a collection of huts in Lorongs 1 and 3, housing some 325 people, was evacuated and demolished. In connection with this particular clearance it is significant that the Improvement Trust provided cheap alternative housing in Balestier Plain but not one person took advantage of it.

Later in the year similar action was authorised in respect of 81 huts in Kampong Martin, also in respect of 37 huts at Lorongs 2 and 4 and only recently action of a similar nature was put in train at Tanjong Rhu.

Personally, I see no objection to individual plank and attap houses as such provided they are properly spaced to some layout, drained and provided with facilities for water supply and conservancy but as a rule they should be allowed only in the outskirts of the town. There is plenty slightly undulating hill land available which is very suitable for this type of building.

But under no circumstances should permits be given for such huts in the interior of the town—and I have in mind the undeveloped lands bordering on the creeks. Such huts are bound to be occupied by the lowest class of wage earner and are certain to be subdivided and added to, sublet and overcrowded. I do not say that land on the immediate outskirts like Kampong Java, Balestier Road etc. is unsuitable for this class of building but no owner should be allowed to let out small plots for this purpose until he has submitted a definite layout just as he would have to do if he were building a more permanent type of house.

The following reports and returns are appended:—

Anti-Mosquito Report.

Report of the Analyst.

Report of the Bacteriologist.

Report of the Lady Medical Officer.

Report of the Superintendent Middleton Hospital.

Report of the Market Inspector.

Return of Inspectors' prosecutions.

Return of Notices.

Return of licences for Offensive Trades.

In conclusion, I wish to put on record my appreciation of the loyal assistance which I had at all times from all members of the staff.

I have the honour to be,

Sir,

Your obedient servant,

P. S. HUNTER,

M.A., M.B., CH.E., D.P.H.,

Municipal Health Officer.

(57-D)

MUNICIPAL HEALTH OFFICE,

SINGAPORE, 7TH FEBRUARY, 1935.

THE MUNICIPAL HEALTH OFFICER,

SINGAPORE.

SIR,

I have the honour to forward the following report on anti-mosquito measures carried out in the Municipal Area during the year 1934.

ANTI-MALARIAL WORKS.

No new areas were opened up during the year.

EXTENSIONS TO EXISTING WORKS.

Permanent drainage and extensions of existing works were carried out in the following areas:—

AREA NO. 115 ALEXANDRA ROAD RAVINE NO. 2.

The construction of a concrete anti-malarial channel, and the drainage of permanent springs in this area, was completed early in the year.

1336 feet of twenty-one inch concrete channels, 174 feet of fifteen-inch concrete channels, 1658 eighteen-inch concrete revetment slabs, 204 feet of four-inch subsoil pipes, 4359 feet of five-inch subsoil pipes, 232 feet of six-inch subsoil pipes, and 354 feet of eight-inch subsoil pipes were laid.

This work was completed.

AREA NO. 132 BUGIS ESTATE.

The earth ditch in the head of ravine No. 1 was replaced by a concrete anti-malarial channel for a distance of 872 feet.

In a part of this section, for a distance of 80 feet, special porous inverts and slabs were laid.

300 feet of three-inch and 300 feet of five-inch subsoil pipes of similar porous material were laid.

Ordinary drains laid in this area consisted of:—614 feet of twenty-one inch concrete channels, 156 feet of eighteen-inch concrete channels, 102 feet of fifteen-inch concrete channels, 1,546 eighteen-inch concrete revetment slabs, 370 eight-inch subsoil pipes, 1,419 six-inch subsoil pipes, 96 five-inch subsoil pipes, and 69 feet of four-inch subsoil pipes.

AREA NO. 121 BRICK FACTORY RAVINE.

The earth ditches in the two heads of this ravine were replaced by a concrete anti-malarial channel, and permanent springs were dealt with by means of subsoil pipes.

1924 feet of twenty-one inch concrete channel, 280 feet of eighteen-inch concrete channel, 162 feet of fifteen-inch concrete channel, 178 feet of twelve-inch concrete channel, 4,218 eighteen-inch concrete revetment slabs, 128 feet of eight-inch subsoil pipes, 452 feet of six-inch subsoil pipes, and 652 feet of five-inch subsoil pipes were laid.

ANTI-MALARIAL AREA NO. 36 WISHART RAVINE.

During heavy rains a land slide occurred, and the loose earth that slipped down completely blocked the ravine floor, thus raising the floor level by eight feet, over a distance of 280 feet.

The existing concrete channel above this point was taken up, the level of the drain raised, and connected to a new drain cut through the blockage at a higher level, over the site of the old drain.

288 feet of twenty-one inch concrete channel, 700 eighteen-inch concrete revetment slabs, 500 feet of five-inch subsoil pipes, and 80 feet of eight-inch subsoil pipes were laid.

A. M. AREA NO. 54 TANGLIN HILL NO. 2.

A land slide occurred at the extreme head of this ravine, which caused the collapse of the concrete anti-malarial channel.

The toe of the slope was strengthened by driving in a row of bakau piles. The area was then levelled off and a new drain laid at a higher level over the site of the old drain. 120 feet of eighteen-inch concrete channel, 6 feet of twenty-one-inch concrete channel, 110 eighteen-inch concrete revetment slabs, 120 fifteen-inch concrete revetment slabs, and 75 five-inch subsoil pipes were laid.

A. M. AREA NO. 25 MORSE RAVINE.

Seepages appeared on the surface of the floor in this ravine, and, on examination, it was found that the cement concrete subsoil pipes laid in this area had eroded and in places collapsed.

The main central line of subsoil pipes throughout the length of the ravine was removed and an open concrete anti-malarial channel was laid.

536 feet of eighteen-inch concrete channel, 30 feet of fifteen-inch concrete channel, and 1,100 eighteen-inch revetment slabs were laid.

A. M. AREA NO. 110 MCRITCHIE RESERVOIR RAVINE.

Dangerous seepages in this area were dealt with by laying 3,612 feet of five-inch subsoil pipes and 230 feet of six-inch subsoil pipes.

Similar seepages were dealt with by laying subsoil pipes as detailed in the following areas:—

A. M. Area No. 57 Bukit Brown Golf Course. 150 five-inch subsoil pipes.

A. M. Area No. 117 Telok Blangah Ravine. 49 five-inch subsoil pipes.

A. M. Area No. 28 Orchard Road No. 1. 44 five-inch subsoil pipes.

A. M. Area No. 15 Woodleigh. 80 five-inch subsoil pipes.

A. M. Area No. 109 McPherson Road. 951 four-inch subsoil pipes, 533 five-inch subsoil pipes and 1,043 six-inch subsoil pipes.

A. M. Area No. 20 Jervois Road No. 1. 130 five-inch subsoil pipes.

A. M. Area No. 12 Scotts Road Railway. 120 four-inch subsoil pipes.

A. M. Area No. 69 Balestier Road Ravine. 20 eight-inch subsoil pipes and 62 five-inch subsoil pipes.

Many smaller repairs and extensions were carried out in other areas.

MAINTENANCE.

Routine maintenance work consisting of clearing and grass cutting was carried out in all the existing anti-malarial areas.

MOSQUITO SURVEYS.

Systematic surveys of the Municipal Area were regularly carried out and 1,112 collections of mosquito larvae were examined and identified in the laboratory.

Collections of adult mosquitos were made by means of a mosquito trap in the Katong area on 33 nights during the year.

The following total catches were recorded:—370 *A. sundaicus*, 123 *A. vagus*, 4 *A. hyrcanus*, 5 *A. kochi*, and 2 *A. tessellatus*.

Of these 478 were dissected and malarial infection was found in one *A. sundaicus*.

No salivary gland infections were noticed.

GENERAL ANTI-MOSQUITO WORK.

662,786 yards of earth drains were cleared and regraded by patrol gangs, and these gangs collected and disposed of a monthly average of 899 large baskets of empty tins.

21,998 gallons of anti-malarial mixture were used in spraying mosquito breeding places principally in the Kallang and Geylang river basins.

CONTROL OF DOMESTIC BREEDING.

Mosquito larvae were found in 7,347 houses and compounds or 17.25 per cent of the houses visited by the Sanitary Inspectors.

176 complaints of nuisance from mosquitos were investigated and in 57 cases the nuisance was found to be principally due to mosquitos found breeding on the complainants' premises.

120 notices were served under the Destruction of Mosquitos Ordinance during the year.

I have the honour to be,

Sir,

Your obedient sesrvant,

W. DAWSON,

Deputy Health Officer.

CHEMICAL LABORATORY,

SINGAPORE, 22ND FEBRUARY, 1935.

THE MUNICIPAL HEALTH OFFICER,
SINGAPORE.

SIR,

I have the honour to submit my report for 1934.

The total number of samples analysed during the year was 15,552 made up as follows:—

Public Water Supply	{	Routine samples from Singapore	
		Island	6,557
Sewage Purification	{	Routine samples from Johore ..	2,829
		Samples from Sewage Purification	
		Works and special samples ..	3,466
		Samples from House Installations ..	406
		From Health Department ..	1,114
Foods, Drugs and Miscellaneous Samples	{	From Engineering Department ..	323
		From Electrical Department ..	423
		From Water Department ..	65
		From Gas Department ..	366
		From Other Departments ..	3

This is an increase of nearly eight per cent on the number of samples examined during 1933, the main increases being in the samples of water and sewage.

MUNICIPAL WATER SUPPLY.

The sources of supply of raw water were from Peirce Reservoir on Singapore Island and from Sultan Ibrahim Reservoir in Johore. I understand that approximately two-thirds of the water supply was drawn from Peirce Reservoir and one-third from Johore.

The chemical characteristics of these sources of supply are practically the same as found for the previous year although there is a definite decrease in the amount of organic matter, particularly from Peirce Reservoir and these supplies are always found to be free from any harmful contamination.

The samples received daily for analysis are drawn from every part of the purification system and include samples from tap supplies in three different parts of the town. The averages and ranges of analyses of these various waters are shown in detail in TABLE A, at the end of this report and the complete analyses, showing averages and ranges, of the two tap supplies at Coleman Street and at Havelock Road, are given in TABLE B.

The method of treatment of the Island supplies is the same as given in my previous report and was found to work satisfactorily throughout the year.

At Pulai filter house the method of treatment given in my previous report was found unsatisfactory about the middle of the year and I carried out a series of tests both at Pulai and in the laboratory with the view to arriving at a method of obtaining a more efficient flocculation of the raw water before filtration. It was found that the substitution of very finely powdered limestone (calcium carbonate) for the lime (calcium hydroxide) previously used gave excellent flocculation with aluminium sulphate. The limestone when added to the raw water does not appreciably alter the reaction of the water whereas the addition of lime makes the water sufficiently alkaline to inhibit good flocculation when the alum is added. When this change had been effected the results for the filtered water at Pulai were consistently excellent.

SEWAGES, EFFLUENTS ETC. FROM THE SEWAGE WORKS.

This plant at Alexandra Road treated an average daily volume of 4,738,000 gallons of sewage, which is an increase of eighteen per cent on the flow for 1933 and twenty-three per cent on the flow for 1932. The description of the purification plant is given briefly in my previous report and no important alterations in the plant have been made during the year under review.

The following table shows how the strength of the sewage has varied during the last six years:—

AVERAGE ANALYSIS OF CRUDE SEWAGE TREATED AT ALEXANDRA ROAD WORKS DURING THE YEARS 1929—1934.

Parts per 100,000.

Year	Free Ammonia	Albuminoid Ammonia	Oxygen Absorbed in 4 hours	Suspended Matter	Chlorides as Chlorines
1929	3.6	0.7	6.18	36.4	86
1930	3.9	0.9	9.95	34.4	82
1931	4.0	1.0	10.27	34.4	55
1932	4.4	1.2	11.78	40.2	48
1933	4.5	1.2	11.31	38.7	29
1934	4.7	1.1	11.60	46.5	26

These figures represent the averages of analyses carried out on daily samples made up from samples taken every two hours at Alexandra Road.

The Detritus tank retained an average of 8.25 per cent of the suspended matter in the crude sewage, the monthly values varying between 1.4 per cent and 21.25 per cent.

The Sedimentation tanks consist of one large Dorr tank and fourteen of the smaller Imhoff type of tank and the Dorr tank treated approximately two-thirds and the Imhoff tanks the remainder of the sewage from the detritus tank. The Dorr tank functioned slightly more efficiently during the year than the Imhoff tanks. The amount of solid matter abstracted by all these tanks, including the Dorr tank, was 43.6 per cent of the solids in suspension in the crude sewage, the monthly values varying from 27.7 per cent to 57.2 per cent. These values are a definite improvement on those for 1933 and are fairly normal for the present type of sewage, containing as it does a considerable amount of dumped night soil.

The liquid effluent from the sedimentation tanks was stronger in character than that for 1933 and this is reflected in the quality of the purified sewage which was not so fully oxidised, as seen in the nitrate figures in TABLE C, at the end of this report. Judged by the British standards, however, these effluents passing into the stream were entirely satisfactory. The percolating filter beds treated 91.44 per cent of the total sewage from the sedimentation tanks, the remainder being partially treated in the bio-flocculation unit before passing to one special filter bed reserved for the purpose.

BIO-FLOCCULATION TREATMENT OF SEDIMENTATION TANKS EFFLUENT.

This unit worked well for the first six months of the year and, during that period, abstracted practically 70 per cent of the suspended matter in the sewage treated. It then began to show very definite signs of a change and the sludge used for screening the solid matter from the sewage could not be reconditioned. The purification went off badly and, in mid-September, the unit was put out of action for two months, to allow the sludge to become thoroughly reconditioned. At the same time the opportunity was taken of cleaning thoroughly all the channels which had a fair amount of bad smelling and putrescent solid matter adhering to the walls. The unit worked normally again during December and gave satisfactory results.

I am of the opinion that troubles will continue while this unit has to treat a sewage whose strength is varying so much at different times of the day. A sewage such as the present sedimentation tanks' effluent must vary tremendously in strength, particularly in colloidal solid matter and the bio-flocculation unit is, I consider, very susceptible to such changes. With a water-borne sewage only to be treated, I should anticipate consistently good results even with high rates of treatment.

This unit treated practically 148,000,000 gallons of sewage during the year and abstracted an average of 57.7 per cent of solid matter, the monthly percentages abstracted varying between 38.0 and 79.0.

Various experiments concerned with the digestion of sludge from the sedimentation tanks, the treatment of crude night-soil in tanks, the working of the Dorr tank and the filtration at high rates of the effluent from the bio-flocculation were continued during the year and special reports have been submitted where necessary.

SEWAGE EFFLUENTS FROM HOUSE INSTALLATIONS.

The maintenance of the majority of these small installations was taken over during March and regular analyses of the purified effluents were carried out.

The following analysis represents the average of 351 tests carried out on filter bed effluents from 92 installations—that is, from all the installations maintained by the Commissioners excluding three Abattoir effluents which are not, at present, subjected to any special purification treatment.

**Average Analysis of Sewage Effluents from House installations
(parts per 100,000).**

Free and saline ammonia	Albuminoid ammonia	Oxygen absorbed in 4 hours	Suspended matter	Chlorides	Nitrates
0.72	0.09	0.85	3.1	3.9	1.7

These figures show that the plants are working efficiently and are better even than during 1933. In those few cases where there have been complaints of bad smell from installations the covering over of the filter beds has proved very successful indeed in eliminating odours and the oxidation of the sewage has in no way suffered.

The total number of samples analysed during the year was 406, including samples taken from both tank and filter bed effluents.

SAMPLES FROM THE HEALTH DEPARTMENT.

The total number of samples analysed was 1,114. These were obtained from various sources, the majority being brought in by the Sanitary Inspectors of the Health Department. 893 samples were examined in connection with Ordinance No. 139 (Sale of Food and Drugs), and 221 came under miscellaneous headings, as follows:—

Miscellaneous samples.

Well and pond waters	..	..	..	202
Other waters	..	..	..	2
Human milk	..	..	..	11
Urine	..	..	..	4
Cat's stomach	..	..	..	1
Fuel	..	..	..	1

The following table gives the details of samples analysed under Ordinance No. 139 and the Regulations of the Ordinance:—

FOOD AND DRUGS SAMPLES.

SAMPLE	OFFICIAL		INFORMAL		Total
	Satis- factory	Unsatis- factory	Satis- factory	Unsatis- factory	
Milk and Milk Products:					
Fresh milk from itinerant hawkers	155	37	..	..	192
Fresh milk from retail shops and dairies	38	55	93
Milk from eating houses (boiled)	17	34	..	..	51
Reconstituted milk	51	..	51
Tinned sterilised milk	1	..	1
Evaporated milk	21	6	27
Sweetened condensed milk	3	83	14	100
Dried milk	4	..	4
Cream	1	..	1
Butter	18	19	37
Ghee	2	..	1	..	3
Tinned Foods other than Milk:					
Green Peas	4	..	6	10
Margarine	7	2	9
Beef dripping	6	..	6
Fruit	1	..	1
Sardines	1	..	1
Drugs:					
Face powder	8	..	75	..	83
Liquid face preparations	2	..	2
Tincture of Iodine	4	8	..	..	12
Glycerine	8	..	8
Lime water	2	5	7
Camphorated oil	4	..	4
Aspirin	4	..	4
Phenacetin	1	..	1
Chinese medicines	2	..	2
Miscellaneous:					
Aerated water from fountains	71	19	90
Soda water from factories	33	..	33
Tea	11	5	16
Cocoa	1	..	1
Lemonade	1	..	1
Beer	1	..	1
Whisky	6	..	6
Vinegar	13	..	13
Tomato ketchup	1	..	1
Chilly sauce	1	..	1
Baking powder	1	7	8
Cane sugar	5	..	5
Honey	3	..	3
Flour	2	..	2
Rice	1	..	1
Patent food	1	..	1
TOTAL	186	86	483	138	893

The samples of milk from the itinerant vendors once again show an improvement on former years. In the following table, no distinction is made between samples from licensed and unlicensed vendors (177 and 15 samples respectively).

ANALYSES OF MILK SAMPLES BOUGHT FROM ITINERANT VENDORS.

Number of Samples		192
DEFICIENT IN NON-FATTY SOLIDS	Number	35
	Percentage	18.25
	Range of Deficiency	0.6% to 37.6%
	Average Deficiency	12.45%
DEFICIENT IN FAT	Number	6
	Percentage	3.1
	Range of Deficiency	1.5% to 49.2%
	Average Deficiency	15.2%

Four samples were deficient in both non-fatty solids and fat, making the total number of samples below standard 37, or 19.3%, compared with 28.3% in 1933, 32.8% in 1932 and 46.3% in 1931. Thus the position with regard to itinerant vendors appears to be improving, although it cannot yet be regarded as satisfactory.

In the case of the samples of fresh milk from the retail shops and dairies, the table gives rather a wrong impression of the results obtained from these samples. The figures given include a series of samples from individual cows, of which some were above and some were below standard, and also thirty-nine samples which were deficient in non-fatty solids to the average extent of 1.6%, which is negligible. These samples appeared to be genuine milk, the deficiency not being due to the addition of water.

Twenty-nine samples of milk from eating houses gave an average deficiency in non-fatty solids of 26.6%, the worst being 54.7% deficient. Six of these, and two others, were also deficient in fat. These samples were taken in July, and at a further "raid" in August, rather peculiar results were obtained. In nearly every case the milk had been boiled down, in some cases to about two-thirds of its original bulk, and some of the samples were so thick that representative analyses could not be obtained. The apparent reason was that the eating house proprietors could not trust their suppliers to supply unwatered milk, so they boiled the milk down to make sure that there would be no excess water in it when they sold it.

The samples of reconstituted and sterilised milk examined were satisfactory. Three samples of unsweetened condensed milk had labels stating that the tin contained the equivalent of a slightly larger

amount of milk than was actually the case, but the discrepancy was not great, and further samples of the same brands were satisfactory. Three other samples were labelled according to the Regulations in force before June 1933, and were below the standards fixed in the present Regulations. Stocks of these were withdrawn from the market by the dealers concerned.

Of the three official samples of sweetened condensed milk, two consisted of condensed skimmed milk and one was below the minimum standards for fat and total milk solids. Eight of the informal samples gave too high a figure for the equivalent pints of milk in the tin, two were low in fat and three were made from skimmed milk. In one case the net weight of the contents of the tin was less than that stated on the label. Thirty-nine tins (sweetened and unsweetened condensed milk) were not labelled in conformity with the Regulations, although the contents of the tins were up to standard. In these cases the facts were brought to the notice of the agents concerned.

In the amendments of the Regulations under Ordinance No. 139, gazetted in December 1932, the use of boric acid for the preservation of butter was prohibited. It is the practice of the Australian butter canning industry to incorporate a small amount of boric acid (0.1 to 0.2%) in the butter exported to Malaya and the Dutch East Indies which they claim is necessary to counteract adverse conditions of shipment and storage. Tinned butter is shipped as ordinary cargo, and kept in native shops for indefinite periods, whilst butter for sale loose is maintained under cold storage conditions up to the time of sale. The presence of a small amount of boric acid accounts for most of the butters which appear in the "unsatisfactory" column of the table, although a few samples contained water in slight excess of the maximum amount (16%) allowed. The question of the advisability of complete prohibition of boric acid in butter is still under consideration.

In the case of margarine, the two samples reported as unsatisfactory both contained boric acid, but these were sold loose, whilst the tinned samples did not contain boric acid.

All the samples of tinned green peas examined contained copper, the amounts (calculated as grains of crystalline copper sulphate per lb. of strained peas) ranging from 2.08 to 5.47 grains per lb. for the unofficial samples (average 3.68 grains) and 5.15 to 12.14 grains per lb. for the official samples (average 9.67 grains).

The position with regard to face powder is now much more satisfactory. Tests have been made by a laboratory assistant in the company of an inspector actually on the shop premises, as in this way many brands can be tested in a short time. In the doubtful cases, the inspector took formal samples, which were tested in the laboratory. Eight such samples showed only very faint traces of lead. It thus appears that the lead carbonate face powders, formerly so common, have now practically disappeared.

The samples of Tincture of Iodine showed several cases of careless dispensing. Two samples conformed to the 1914 edition of the British Pharmacopoeia, but not to the 1932 edition, which is now official. The other six samples were classed as unsatisfactory for the following reasons:—

One sample contained an excess of potassium iodide and iodine.

One sample was deficient in both potassium iodide and iodine.

Two samples contained an excess of potassium iodide, and were made up with methylated spirit in place of alcohol.

Five samples of lime water were deficient in lime, the deficiencies ranging from 6.7% to 70%. Three of these were over 40% deficient, and the dispensaries concerned were notified. With these exceptions, all the drug samples were satisfactory. The two Chinese medicines were free from poisonous metals and alkaloids.

As in previous years, a close check was kept on the small aerated water fountains. In a few cases traces of lead or copper were found in the water, but except in the case of one locally made fountain, where the pollution was considerable, the machines all gave satisfactory samples after being thoroughly cleaned out. The bottled soda water samples were entirely satisfactory.

Four samples of tea dust and one of tea were deficient in water soluble extract, and three of these tea dust samples contained amounts of sand ranging from 2.5% to 4.6%. All the vinegar samples were satisfactory from an analytical standpoint, but only one sample was correctly labelled. Only one sample of baking powder conformed to the figure for "available carbon dioxide" laid down in the Regulations. This figure is possibly too stringent for the humid atmosphere experienced locally. Two baking powders contained anhydrous sodium aluminium sulphate as the acidic constituent, and hence failed to conform to the limiting figure for sulphates, calculated as calcium sulphate. With these exceptions, the "Miscellaneous" samples were satisfactory.

Samples were analysed and reported on to other departments as follows:—

SAMPLE	Water Dept.	Gas Dept.	Electrical Dept.	Engineers Dept.	TOTAL
Various waters	34	...	...	251	285
Sewages ... ..	...	...	...	36	36
Coal	9	57	422	15	503
Coal gas ... ..	...	1	...	...	1
Coke ... ..	...	296	...	...	296
Lime	11	...	...	...	11
Chloride of lime	1	...	...	...	1
Soda ash	1	...	...	...	1
Sulphate of Alumina	2	...	...	...	2
Powdered limestone, coral, &c. ...	1	...	...	1	2
Various sludges, incrustations, &c. ...	5	1	...	...	6
Sand	1	...	...	...	1
Battery acid ... ..	...	...	1	...	1
Gas liquor ... ..	...	1	...	...	1
Tar ... ..	...	4	...	...	4
Spent oxide ... ..	...	6	...	...	6
Soil and clay	13	13
Glazed pipe	2	2
Firewood	2	2
Methylated spirit	3	3
	65	366	423	323	1,177

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In addition two samples of incinerator ash were examined for the Superintendent of Town Cleansing, and some inflammable material for the Fire Brigade.

I have pleasure in recording my thanks to the laboratory staff for their willing co-operation with Mr. Clark and myself in routine and research analyses throughout the year.

I have the honour to be,

Sir,

Your obedient servant,

R. E. WILLGRESS,

A.R.C.S., B.Sc., F.I.C.,

Municipal Analyst.

TABLE A.

Average and Range of Monthly Analyses of Singapore and Johore Raw Waters for 1934.

PARTS PER 100,000	MacRitchie Reservoir		Pierce Reservoir		Sultan Ibrahim Reservoir		Pulai III Catchment		Pontian Kechil Reservoir	
	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average
Total solids dried at 180°C	1.88/3.12	2.44	1.84/2.64	2.32	2.04/4.92	3.11	2.12/7.72	3.27	2.68/5.88	4.08
Organic Matter ..	0.96/1.92	1.36	0.88/1.76	1.27	0.92/2.48	1.37	0.84/3.20	1.39	1.20/2.96	2.06
Mineral Matter ..	0.60/1.68	1.08	0.60/1.60	1.05	0.64/3.04	1.74	0.88/4.52	1.88	0.80/3.92	2.02
Total solids in suspension ..	0.12/0.96	0.31	0.08/0.52	0.27	0.12/1.40	0.42	0.12/3.40	0.73	0.16/2.96	0.80
Free and Saline Ammonia .	0.001/0.002	0.003	0.001/0.008	0.004	0.001/0.022	0.007	Absent/0.011	0.005	0.001/0.008	0.004
Albuminoid Ammonia ..	0.004/0.012	0.009	0.003/0.010	0.007	0.002/0.012	0.006	0.002/0.01	0.005	0.004/0.016	0.010
Nitrites as Nitrogen ..	...	Absent	...	Absent	...	Absent	...	Absent	...	Absent
Nitrates as Nitrogen ..	...	Absent	...	Absent	...	Absent	...	Absent	...	Absent
Oxygen absorbed in 3 mins.	0.014/0.038	0.021	0.016/0.043	0.027	0.017/0.033	0.025	0.011/0.036	0.023	0.028/0.057	0.043
Oxygen absorbed in 4 hours	0.041/0.072	0.055	0.056/0.099	0.075	0.041/0.071	0.060	0.033/0.107	0.062	0.096/0.170	0.126
Chlorides as Chlorine ..	0.1/0.2	0.14	0.1/0.3	0.15	0.1/0.3	0.2	0.1/0.3	0.18	0.1/0.3	0.15
Iron ..	0.05/0.09	0.07	0.045/0.10	0.067	0.02/0.09	0.055	0.035/0.10	0.058	0.02/0.11	0.051
Reaction—PH Value ..	6.3/6.5	6.5	6.3/6.4	6.3	6.1/6.3	6.2	6.1/6.5	6.3	6.6/6.9	6.8
Alkalinity (as CaCO ₃) ..	0.10/0.50	0.24	0.05/0.40	0.18	0.25/0.60	0.41	0.10/0.80	0.44	0.55/1.40	0.92
Carbon Dioxide ..	0.15/0.25	0.18	0.10/0.25	0.18	0.30/0.75	0.52	0.30/0.65	0.40	0.20/0.30	0.27
Colour in Lovibond 2 ft. Tintometer: 1. Yellow ..	3.6/8.0	4.8	3.0/6.0	4.3	1.4/5.2	2.9	1.7/4.2	2.9	1.4/4.3	3.1
2. Red ..	0.6/3.2	1.3	0.6/2.2	1.2	0.4/1.5	0.7	0.3/1.2	0.7	0.3/1.2	0.8
3. Blue ..	0.1/2.0	0.4	0.1/.0	0.3	0.1/0.4	0.2	0.1/0.5	0.2	0.1/0.3	0.1

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TABLE B.

Averages and Ranges of Monthly Analyses
during 1934 of Singapore Tap Supply.

PARTS PER 100,000	HAVELOCK ROAD TAP SUPPLY			COLEMAN STREET TAP SUPPLY		
	Range		Average	Range		Average
Total Solids dried at 180°C	2.88	4.28	3.27	2.44	3.44	2.94
Organic Solids ..	0.80	1.96	1.22	0.64	1.56	1.14
Mineral Matter ..	1.00	3.08	2.05	1.04	2.16	1.80
Total Solids in Suspension	0.0	0.56	0.27	0.0	1.08	0.36
Free and Saline Ammonia	0.001	0.009	0.003	Absent	0.003	0.002
Albuminoid Ammonia ..	0.001	0.008	0.005	0.001	0.006	0.004
Nitrites as Nitrogen ..	...	...	Absent	...	...	Absent
Nitrates as Nitrogen ..	...	...	Absent	...	...	Absent
Oxygen absorbed in 3 mins.	0.005	0.019	0.009	0.004	0.014	0.007
Oxygen absorbed in 4 hours	0.015	0.033	0.022	0.010	0.028	0.017
Chlorides as Chlorine ..	0.1	0.3	0.2	0.1	0.4	0.2
Iron ..	0.005	0.025	0.011	0.01	0.02	0.013
Reaction—PH Value ..	6.5	6.9	6.8	6.5	6.9	6.8
Alkalinity as (CaCO ₃) ..	0.75	1.50	1.01	0.65	1.00	0.82
Carbon Dioxide ..	Alk.	0.35	0.19	0.15	0.35	0.25
Colour in Lovibond 2 ft. Tintometer: Yellow ..	0.5	0.8	0.7	0.6	0.9	0.7
Red ..	0.1	0.1	0.1	0.1	0.1	0.1
Blue ..	0.2	0.6	0.5	0.1	0.7	0.5

TABLE C.

Average of Daily Analyses of Crude Sewage and Effluents from Alexandra Road Works during 1934.

PARTS PER 100,000	AMMONIA		Oxygen absorbed in 4 hours	Suspended Matter	Nitrates as Nitrogen	Chlorides as Chlorine	Dissolved Oxygen absorbed in 3 days
	Free	Albuminoid					
Crude Sewage	4.7	1.1	11.60	45.5	...	26	...
Detritus Tank Effluent .. ..	...	...	...	43.0	...	...	...
Dorr Tank Effluent	4.9	0.8	7.11	21.0	...	28	...
Imhoff Tank Effluent	5.6	0.8	8.00	24.5	...	27	...
Calculated Average Tank Effluent ..	5.20	0.80	7.47	23.9	...	28	...
Bio-Flocculation Effluent	5.0	0.5	4.08	8.3	...	28	...
Effluent Filter Beds Blocks A & B ..	1.10	0.27	3.08	12.4	1.3	30	...
Humus Tanks' { From Blocks A, B & E ..	0.98	0.12	1.36	2.0	1.3	27	1.05
	0.91	0.11	1.35	2.0	0.5	28	1.13

TABLE D.
Ranges of Daily Analyses of Crude Sewage and Effluents from Alexandra Road Works during 1934.

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PARTS PER 100,000	AMMONIA		Oxygen absorbed in 4 hours	Suspended Matter	Nitrates as Nitrogen	Chlorides as Chlorine	Dissolved Oxygen absorbed in 3 days
	Free	Albuminoid					
Crude Sewage	2.0/8.5	0.2/2.8	4.08/17.70	25.8/86.5	...	7/240	...
Detritus Tank Effluent .. ..	...	...	...	22.3/90.0	...	...	...
Dorr Tank Effluent	2.0/7.6	0.2/2.2	3.33/10.30	9.0/38.5	...	9/200	...
Imhoff Tank Effluent	2.5/9.0	0.1/2.3	3.15/12.54	11.3/46.8	...	9/180	...
Bio-Flocculation Effluent	1.4/9.0	0.08/1.5	1.92/7.40	2.4/21.8	...	11/146	...
Effluent Filter Beds Blocks A & B	0.7/2.2	0.04/0.56	1.57/6.00	2.1/21.8	0.2/2.2	11/151	...
Humus Tanks' Effluent } From Blocks A, B & E	0.46/1.90	0.02/0.36	0.88/2.47	0.5/7.1	0.7/2.1	11/138	0.32/2.47
	0.3/1.60	0.02/0.26	0.83/1.93	0.5/4.0	0.1/2.0	9/154	0.35/2.38

(73-D)

BACTERIOLOGICAL LABORATORY,

SINGAPORE, 31ST JANUARY, 1935.

THE MUNICIPAL HEALTH OFFICER,
SINGAPORE.

SIR,

I have the honour to report on the work done in this department during the year 1934.

I. PUBLIC HEALTH EXAMINATIONS.

22,790 specimens were received, involving 28,127 examinations.

MALARIA.

4,475 blood films were received, 552 more than last year. Malaria parasites were found in 598, or 13.4 per cent. There were 276 subtertian infections, 315 benign tertian, 5 quartan, and 2 mixed subtertian and benign tertian. Johore Water Works furnished 102 positive films, the Health Office 196, and practitioners 300.

TUBERCULOSIS.

Human Specimens.—1,413 specimens of sputum, 9 of faeces, 8 of urine, 4 of pus, and 25 of pathological exudates were examined. The tubercle bacillus was demonstrated in 270 specimens of sputum, 2 of faeces, 2 of urine, and none from pus and pathological exudates.

Animal Specimens (Swine).—3 glands and 1 lung were examined and acid-fast bacilli were found in all of them.

Animal Specimens (Oxen).—4 glands, 3 lungs, 2 livers, 2 spleens, and 1 kidney were examined. The tubercle bacillus was found in 3 glands, 3 lungs, 2 livers, 1 spleen and 1 kidney.

Milk.—83 specimens of milk were examined. Acid-fast bacilli were found in none.

TYPHOID AND PARATYPHOID FEVERS.

536 agglutination tests were made, and 33 samples of serum were positive with *B. typhosus*, 1 with *B. paratyphosus* A, and 8 with *B. paratyphosus* B. 36 specimens of faeces, 14 of urine, and 66 of blood were cultured, and the typhoid bacillus was isolated from 1 specimen of urine. Complement fixation test was done on 2 specimens of blood with negative results.

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DYSENTERY.

Amoebic.—1,389 specimens were examined. The *E. histolytica* was present in 39, and *E. coli* in 9.

Bacillary.—411 specimens were received, and *B. dysenteriae* of Hiss and Russell was isolated from 5, and Strong's bacillus from one.

CHOLERA.

One specimen was examined, with negative result.

PLAGUE.

No specimens of human origin were received during the year.

RATS.

3,736 rats were dissected, but none were found infected with plague. The species and distribution are shown in the following table:—

Source	Decumanus		Rattus		Concolor		Musculus		Croci- dura	Total
	M	F	M	F	M	F	M	F		
Port and Ships	21	62	192	223	3	6	—	—	3	510
Town ..	763	1,695	73	85	89	173	2	7	339	3,226
	784	1,757	265	308	92	179	2	7	342	3,736
Total ..	2,541		573		271		9		342	3,736

RAT FLEAS.

2,175 fleas were caught, an average of 0.6 of 60 per hundred rats. The average in the port series was 1.2 and 0.5 in the town.

CEREBRO-SPINAL-FEVER.

49 specimens of cerebro-spinal fluid were received, and the meningococcus was found in 17.

DIPHTHERIA.

4,057 throat swabs were examined from 878 of which *C. diphtheriae* was isolated. 744 of these came from the Registrars, 10 of which were positive. 18 cultures were tested for virulence and of these 7 were virulent.

LEPROSY.

52 specimens were examined and the *My: leprae* was demonstrated in 15.

Miscellaneous included:—

306	specimens of urine for General Examination.
104	„ Pathological Exudates for General Examination.
950	„ Pus for Gonococci (135+ve).
7	„ Prostatic Smears for Gonococci (1+ve).
3,718	„ Faeces for Intestinal parasites (*).
1,827	„ Blood for Wassermann Reaction (260+ve).
17	„ Cerebro-spinal fluid for Wassermann Reaction (9+ve).
17	„ Cerebro-spinal fluid for Kahn Reaction (—ve).
1,778	„ Blood for Kahn Reaction (254+ve).
530	„ Blood (Rat) for Trypanosomes Lewisi (76+ve).
6	„ Sera for T. Pallida (—ve).
4	„ Blood for Filaria (—ve).
1	„ Sputum for Pneumococci (—ve).
1	„ Blood for Piroplasmosis (—ve).
15	„ Blood for Weil-Felix Reaction (4+ve).
1	„ Smear for B. anthracis (+ve).
13	„ Brushes for B. anthracis (—ve).
8	„ Umbilical cord for B. tetanus.
13	„ Swabs from umbilicus for B. tetanus.
20	„ Powders for B. tetanus.
1	„ Hair for Ringworm fungus.
70	„ Blood for Differential Count.
25	„ Pathological Tissues for Section.
4	„ Cultures for Vaccine preparation.
134	„ Milk.

(*)=432 ankylostome ova, 5 strongyloids, 560 Ascaris ova, 813 trichuris ova, 29 oxyuris ova, 1 tapeworm ova, 20 lamblia cysts and 6 intestinal flagellates.

WASSERMANN AND KAHN REACTIONS.

1,833 samples of blood and 17 of cerebre-spinal fluid were received during the year.

The results were as follows:—

	Positive	Negative	Doubtful Positive	Doubtful Negative	Anti Complementary	Total
L. M. O. ..	118	785	7	9	18	937
St. Andrew's Hospital	52	388	13	5	8	466
Middleton Hospital .	4	15	3	0	2	24
Health Office ..	12	23	0	1	3	39
Registrars ..	41	270	2	2	2	317
Private ..	1	28	0	2	0	31
Others ..	1	17	1	0	0	19
	229	1,526	26	19	33	1,833

The Kahn reaction was done on 1,785 specimens and agreed with the Wassermann reaction in 1,740 or 98% of all cases, of which 236 were positive and 1,504 negative. In 26 cases the Wassermann was positive

and the Kahn negative and in 19 the Wassermann was negative and the Kahn positive. The Kahn reaction was done on 28 specimens of blood that were anti-complementary, and was positive in 16 and negative in 17.

The percentage agreement in the different series to nearest whole number is as follows:—

Source	Agreed	W+ K—	W— K+
Lady Medical Officer ..	98 per cent	1 per cent	1 per cent
St. Andrews Hospital ..	96 „ „	3 „ „	1 „ „
Middleton Hospital ..	88 „ „	12 „ „	0 „ „
Health Office	97 „ „	0 „ „	3 „ „
Registrars	98 „ „	1 „ „	1 „ „
Private	94 „ „	0 „ „	6 „ „
Others	95 „ „	5 „ „	0 „ „

II. WATER.

7,321 routine samples were analysed, and the average results obtained are shown below and are satisfactory.

Source	Number of Organisms on Agar Per M.L.	Lactose Fermenters present in						
		—100	+100	+10	+1	+0.1	+0.01	+0.001
Sultan Ibrahim V. Tower ..	188	17.7	82.3	26.6	2.5	—	—	—
Sultan Ibrahim C. W. Tank ..	18	97.9	2.1	—	—	—	—	—
Seletar Reservoir ..	415	5.9	94.1	70.6	16.0	0.9	—	—
Pierce Reservoir ..	93	8.0	92.0	42.4	6.7	—	—	—
MacRitchie Reservoir V. T. ..	196	—	100.0	81.1	21.4	0.8	—	—
Bukit Timah Raw ..	—	—	—	—	—	—	—	—
Woodleigh (C. Iron Main) ..	128	11.4	88.6	36.1	2.1	—	—	—
Pearl's Hill 1 (Depth) ..	53	52.3	47.7	12.5	1.0	—	—	—
Pearl's Hill 2 (Depth 78 Days)	46	66.7	33.3	3.8	—	—	—	—
Fort Canning Reservoir ..	41	92.9	7.1	0.4	—	—	—	—
Tap (Office) ..	18	95.8	4.2	—	—	—	—	—
Tap (Lorong Lalat) ..	36	96.6	3.4	0.9	—	—	—	—
Tap (Havelock Road) ..	41	81.8	18.2	3.4	0.4	—	—	—
Tap (Average of 3 taps) ..	32	91.4	8.6	1.4	0.1	—	—	—
Mt. Emily Swimming Pool.								
Shallow Eng 7-30 a.m. ..	37	77.3	22.7	6.0	0.9	—	—	—
Deep End 7-30 a.m. ..	35	81.0	19.0	7.8	0.9	—	—	—
Shallow End 2 p.m. ..	19	87.2	12.8	3.4	0.4	—	—	—
Deep End 2 p.m. ..	19	93.2	6.8	3.0	0.4	—	—	—

(77-D)

298 miscellaneous samples were examined. 690 samples were examined for algae growths.

III. SEWAGE.

50 samples of chlorinated effluent from the Middleton Hospital, and 43 samples of wash water from the Conservancy Department were examined. The results were quite satisfactory.

IV. MORTUARY.

There were 6 post mortem examinations during the year. The causes of death were:—

Diphtheria	...	...	...	...	2
Bronchitis	...	...	...	...	2
Tuberculosis	...	...	...	...	1
Marasmus	...	...	...	...	1

I have the honour to be,

Sir,

Your obedient servant,

W. DAWSON,

D.S.O., M.B., CH.B., D.P.H., D.T.M. & H.,

Acting Municipal Bacteriologist.

(78-D)

MUNICIPAL HEALTH OFFICE,

SINGAPORE, 18TH FEBRUARY, 1935.

THE MUNICIPAL HEALTH OFFICER,

SINGAPORE.

SIR,

I have the honour to submit the following report of the work done in the Supervision of Midwives and Infant Welfare Department for the year 1934.

NEW BABIES.

During the year 14,258 new babies were taken on the Clinic Registers at the three centres. This figure shows a slight increase over the numbers taken on the Registers in 1933, and it represents 82.28% of the total births for the year.

CLINIC CONSULTATIONS.

There were 42,247 Clinic Consultations. This shows a marked decrease (6,990) from the figure 49,237 for the previous year. At first sight this may give an unfavourable impression, but the reason for it is as follows:—

When I took over the work of the Department at the end of 1933, it struck me very forcibly that the mothers who attend the Clinics were becoming inclined to look upon them as Out-Patient Clinics, where they could get all kinds of treatment—both medical and (minor) surgical—for themselves and their babies.

I felt that if this erroneous impression were allowed to continue, the whole aim and object of the Department, which is essentially to teach Mothercraft and Infant Welfare, would be adversely affected, and decided to take steps to rectify this.

I impressed upon the Staff—both in the Clinics and working on the Districts—that they were to do all they could to teach and explain to the mothers that the Clinics were places where they could get advice about the care of themselves and their babies, but that if they or their children had anything but the simplest of ailments, they must try to understand that could not expect treatment at the Clinics, but that they should either seek the advice of a Private Doctor, or go to a recognised Out-Patient Dispensary or to the Out-Patient Department at one of the Hospitals, and that if they wished, we at the Clinics would always see them and their babies, and give them advice as to where to go, and would furnish them with any necessary letter required for that purpose.

At first there was some little difficulty in getting them to understand this, but within a very short time they grasped the idea, and I have

good reason for stating that the numbers who now go straight to Hospital of their own accord, when they or their babies are sick, have definitely increased during the year, while 666 patients were sent by us from the three Clinics—332 as Out-Patients, 334 as In-Patients, and only 199 refused Hospital treatment, which is a smaller number of refusals than in the previous year.

When it is taken into consideration that the average number of Clinic attendances of a sick mother or baby would be at least 10, I think that these figures show in a striking manner the reason for the decrease in Consultations.

One important feature of this decrease has been that it has made it possible for much more time to be devoted to each case attending the Clinics, and that, without exception, each mother has had far more shown and taught her in the way of Mothercraft and Infant Care than before.

Only the very simplest of ailments are now treated, such as the ever-present "coughs and colds" and "stomach troubles", which yield to simple medical treatment and improvement in the manner of feeding. Other treatment has been practically entirely confined to Gonococcal Conjunctivitis and Chronic Discharging Ears, as it is almost always impossible to get the mothers to take their children to Hospital for these which they consider to be trifling ailments.

Certain prejudices held by the mothers, such as bathing and weighing of the babies show that they are slowly, and I hope, surely on the wane.

During the past year the numbers of baths given at the Clinics have increased very considerably—many mothers going to a Clinic for the express purpose of bathing their babies and getting them weighed.

FEEDING BOTTLES.

At the beginning of the year the campaign against dirty and unsuitable feeding bottles was intensified, and has been pursued with vigour throughout the year.

Every mother now brings her feeding bottle to the Clinic where it is examined as to suitability, cleanliness, etc.

Feeding bottles, with brush, teat and valve, have been put in each Clinic, and the mother who requires teaching, is shown the "Clinic bottle" the method of washing it, preparing the feeds etc.

If they are told in simple words "why" they should do as we show them, they soon seem to understand and appreciate the reasons and almost without exception they have improved in their care of the feeding bottles and the preparation of the feeds.

The same method of "showing" has been adopted in the matter of beds and clothing for the babies. Specimens of basket cots, hats etc. have been put into each Clinic for the mothers to see, also suitable supports such as required by nursing mothers, have been supplied in simple forms, so that they can see how to make them for themselves.

While pursuing this "campaign" against dirty feeding bottles it has been my earnest endeavour to get as many mothers as possible to feed their babies by breast, and there is a marked increase in the numbers of wholly or partly breast fed infants.

It is, of course, quite impossible in some cases, as for instance, if the mother is physically unfit to do so, or where she may have to go out to work, but in quite a number of cases, mothers have had treatment for their ill-health, or have been given preparations to increase their supply of breast milk, are now able to at least partly feed their babies themselves, and a good many of the working mothers try to do their best by giving their babies a breast feed before they go to work in the morning, and when they return at night.

In connection with these remarks on the question of feeding, it is interesting to note that the number of tins of free milk distributed during the year has been 15,922 as compared with 20,480 for 1933 i.e. a decrease of 4,558 tins.

This decrease may be explained, possibly to a certain extent, by increased employment, but I am convinced that the main cause is the increase in breast feeding.

Before leaving the subject of work in the Clinics, I should like to mention that it has been extremely gratifying to see a tendency for yet more Malays to attend the three centres.

INFANTILE MORTALITY.

The death-rate among infant Malays is higher than in any other nation in the community, and I feel confident in stating that in the majority of instances death results or is greatly aggravated by gross errors in the feeding of the infants.

The increase in the attendance of Malay mothers with their babies is therefore particularly encouraging, as they have not been very easily persuaded to come, but now, once they have been "to see what it is like" and have overcome their timidity, they have come again, often bringing friends as well, and have benefitted by the advice they have received. It is to be hoped that their attendances will continue to increase, and that ultimately, a more material decrease in the infant Malay death-rate will be the result.

HEALTH VISITORS.

The Health Visitors paid a total of 110,982 visits which shows an increase of 4,165 over the number paid in 1933.

This is all to the good, as it shows that there is an increase in the opportunities of teaching and showing the mothers in their own homes the rudiments of Mothercraft, Infant Care and Hygiene.

In connection with this particular branch of work—to which I attach a great deal of importance—I have made visits on several occasions to the homes of some of these mothers, both in the out-lying and

the central districts, to get an idea at first hand of (1) how the mothers have to live and (2) the problems with which the Health Visitors are faced in the course of their work.

As a result of my investigations, I gave the Health Visitors a course of lectures on the teaching of Mothercraft, Infant Care and Hygiene, under these particular conditions, and their answers to the questions set in an examination paper given at the end of the course of lectures showed, to a marked degree, that they had grasped the facts put before them.

A course, on similar lines, will be given to the District Staff Nurses in the near future, on their special branch of work i.e. Supervision of Midwives, Post-natal Care, and care of the Newly-born.

SUPERVISION OF MIDWIVES.

In the branch of work devoted to the Supervision of Midwives, the District Sister and Staff Nurses paid 19,946 visits. Of these visits, 15,491 were first visits, and 3,565 were re-visits. This shows that 825 more visits were paid in 1934 than in 1933, which may be explained by the fact that the actual number of women confined has increased in 1934.

There were 890 wrong addresses given, as against 856 for the previous year, and while this shows a small increase, the number of untraced cases—525 for 1934 and 836 for 1933—shows a decrease of 230.

2,705 extra visits were paid, tracing these wrong addresses, which brings the total visits paid by the District Sister and Staff Nurses up to 22,651 for the year.

Of the 15,491 mothers visited, 999 were found to be ill, 50 had died, and 209 of them had removed within the first ten days of the birth of the child.

The figures for the number of mothers found to be living in cubicles or single rooms (11,311) show an increase of 1,222 over those for 1933.

Of the 15,608 births reported to the Clinics (including 117 pairs of twins) 14,744 infants were seen by the District Sister and Staff Nurses, i.e. 94.5%.

Of these infants, 886 were found to be ill, and 194 had septic umbilical cords.

Of the infants **not seen**, 292 were stillborn, 221 had died and 351 were being "nursed out" or had been given away.

The numbers of mothers who had no skilled attention at confinement (3,792) show a decrease from the figures (3,873) in 1933, and this decrease, though small, is encouraging.

This problem of mothers having no skilled attention at their confinement is one that presents many difficulties, and it is extremely hard to solve as so many factors are involved.

One of the chief is the question of locality, which can be shown by the fact that there are twice as many of these cases in the out-lying districts (2,537) as there are in the "inside" districts (1,253).

While this is an unfortunate state of affairs, it is gratifying to note that at any rate, there is an increase on the part of these mothers in getting attention from Midwives after their confinement, and a greater readiness to apply to the Municipal Midwives for Post-natal attention.

Incidentally, though it might very well be expected that the occurrence of puerperal sepsis would be high, in a community where there are so many cases of unskilled attention at confinement, actually the numbers are surprisingly low, and show a steady decrease e.g. in 1931 there were 36 cases, and in the year 1934 the number had fallen to 16—.092% for the total births for the year—a figure which compares very favourably with those of some of the larger English towns, I would venture to suggest.

REGISTERED MIDWIVES.

B. Class Registered Midwives attended 7,948 cases during the year, and C. Class attended 1,152.

MUNICIPAL MIDWIVES.

In view of the remarks on the work of the Municipal Midwives in the 1933 Report, it is noteworthy that there is a record of increased work by them in 1934.

In 1933 the total number of cases seen by them was 579, and in 1934 it was 826—an increase of 235 cases; and the number of visits paid by them rose from 3,649 in 1933 to 4,728 in 1934—an increase of 1,079.

The actual number of confinements has only increased by 39 which is undoubtedly low, but it can be taken as an indication that the activities of these Municipal Midwives are becoming a little more widely known.

The largest increase is in the number of Post-natal cases from 305 to 526 which can be explained, as previously suggested in this report, by the increasing tendency to call these Midwives in outlying districts after the confinement has taken place, and where quite possibly, in a number of instances, the difficulties of communication in the night, and of transport, have been the chief factors which have prevented their being called sooner.

There is a slight improvement in the number of poor cases being "booked" for the free services of the Municipal Midwives, and it is hoped that these will be increased to an appreciable extent during the coming year.

One important new feature of the work of these Midwives, is that there is a record of 48 Ante-natal cases having been seen by them, and this may be considered as being a step in the right direction.

Of all the confinement cases attended by them, only 6 had to be sent to hospital, and the "Panel Doctors" were called to 32 cases—an increase of 4 over the figures for both 1932 and 1933.

TETANUS OF THE NEWLY-BORN.

The occurrence of Tetanus of the Newly-born has been given very careful consideration throughout the past year.

In 1933 there were 80 cases of this reported, all being definitely diagnosed.

This year, through the kind co-operation of the Doctors in charge of the Babies Wards both at the General and at St. Andrew's Hospital, all definite cases of Tetanus Neonatorum have been reported to me, as soon as they have been admitted to hospital, and the diagnosis made.

Only a comparatively few cases were seen either by the District Staff or in the Clinics, as, in practically every instance, the baby was taken direct to hospital by the parents, very often before there had been an opportunity for it to be visited.

Each case was very carefully "followed up" as soon as the report was received, with a view to discovering whether they had been cases of "unskilled attention at confinement" or had been attended by Registered Midwives.

Every case was one of "unskilled attention."

In all, there were 57 cases within the Municipal Area during 1934.

Each case was also investigated from the point of view of the dressing applied to the cord, and wherever possible the original powder or "medicine" used was sent to the Municipal Bacteriologist for examination. Any case seen in the Clinics had a swab of the umbilicus taken, and that together with the dressing found on the infant was sent to be examined.

Altogether 41 specimens were sent, i.e. 7 umbilical dressings, 14 umbilical swabs, and 20 powders and "medicines."

One umbilical swab, and one umbilical dressing yielded a pure culture of the Tetanus Bacillus.

These investigations will be carried out through the coming year.

VENEREAL DISEASE.

Venereal Disease continues to take heavy toll in ill-health and deaths of babies under one year, and investigations, similar to those carried out in previous years, have been continued during 1934 with the following results:—

193 fathers who came to the Clinics had their blood tested, and 19.89% were found to have syphilis.

575 mothers were examined, and 12.86% were positive, and 169 babies were also examined, and 18.34% were positive.

Under the heading "mothers and babies" are included 104 "pairs" of mothers whose blood was taken at the same visit as their babies. These gave some interesting results:

In 18.26% of these cases done in "pairs" both mother and baby were found to be positive, in 2.88% the mother gave a negative result while the baby was positive, and in 10.57% the mother was positive and the baby negative.

In three cases the father, mother and baby were all positive, and there was one extremely unusual case of twins in which one was definitely positive and the other negative—the blood tests coinciding with the clinical pictures of one unhealthy baby which was not thriving, and one healthy, normal child.

It should be realised that this examination of the blood of mothers and babies is only done in the Clinics, where the mothers have a bad pregnancy history—stillbirths, miscarriages, dead babies etc.—or where the babies are not thriving, in spite of treatment and adequate diet. There are many other babies seen, so obviously specifically infected that it has been considered unnecessary to examine their blood prior to treatment, so that if it were possible to carry out a systematic routine examination of all mothers and babies attending the Clinics, a much higher percentage of positive results would be obtained—to which remark may be added a reminder of that made in last year's report, namely, that the blood test is often not reliable in pregnant women, and for some time after confinement.

297 mothers were visited in their homes, after the death of a baby under one year, or in the case of a stillbirth, and in 15.59% the result of the blood test was positive.

Venereal Disease can be taken as one, if not the chief factor in the causation of stillbirths, premature births etc. but I would suggest that another factor should be taken into consideration.

It is well recognised that there is a serious lack of the anti-beri-beri Vitamin B in the diet of many mothers seen in their homes and at the Clinics (68 cases of advanced beri-beri were reported among mothers seen on the Districts during the year, and it is certain that there are many more of a minor degree) and this may be due partly to the result of the poor quality of the food taken by the mothers, but also partly as the result imposed by tradition in many cases, where there is restriction of the type of food to be taken by the mother for some time both before and after delivery.

It is possible that this avitaminosis is not only confined to cases of material beri-beri, but that lack of Vitamins E and F (which are now known to be essential for the successful termination of pregnancy, and for the production of well-built healthy babies, as well as for adequate lactation), should be considered as yet another determining factor in the occurrence of at least some of the stillbirths etc. and it is hoped that by giving advice wherever possible, to pregnant women in particular, as regards suitable diet, and combining that advice with the exhibition of preparations rich in these essential Vitamins, there may be some diminution in this loss of pre-natal and neo-natal life.

I should like to take this opportunity of recording my deep appreciation of the practical help given by certain firms who supplied free milk, feeding bottles etc. for the infant victims of the disastrous fire at Bukit Ho Swee in August, while they were housed at the "Great World."

(85-D)

STAFF CHANGES.

Sisters Ramsay and Cacace resigned to get married. Mrs. Mary Law and Mrs. Annie Ng were promoted from the posts of Health Visitors to those of Staff Nurses, to fill the vacancies caused. Nurse Seok Ai resigned to take up a Hospital appointment, and 4 Health Visitors were appointed to fill the vacancies caused by promotion etc.

I have the honour to be,

Sir,

Your obedient servant,

MURIEL G. E. CLARK,

Lady Medical Officer

(86-D)

MIDDLETON HOSPITAL,

SINGAPORE, 6TH FEBRUARY, 1935.

To,

THE MUNICIPAL HEALTH OFFICER,

SINGAPORE.

SIR,

I have the honour to submit my report for the Middleton Hospital for the year 1934.

The following table gives a summary of the cases treated during the year:—

Disease	Remaining from 1933	Admitted	Discharged	Died	Remain- ing
Smallpox ...	—	1	—	1	—
Cholera ...	—	—	—	—	—
German Measles ...	—	40	40	—	—
Chickenpox ...	8	398	384	—	22
Measles ...	3	58	56	—	5
Diphtheria ...	9	152	112	41	8
Cerebro-Spinal Fever ...	—	7	3	4	—
Erysipelas ...	—	2	2	—	—
Whooping Cough ...	1	6	6	1	—
Mumps ...	8	149	153	—	4
Contacts ...	12	37	47	—	2
Tuberculosis ...	—	4	1	3	—
Typhus ...	—	1	1	—	—
Japanese River Fever...	—	1	—	—	1
Other Diseases ...	—	72	61	11	—
Scarlet Fever ...	—	2	2	—	—
Total ...	41	930	868	61	42

If contacts are discounted, the number of admissions (930) during the year constitutes a record—chickenpox accounting for no less than 398. Of the total admissions, 61 died and 42 remained at the end of the year.

Small-pox. There were two sporadic cases during the year—one a Malay admitted in May, and the other a Chinese admitted in October. The former, who appeared a typical discrete case was afterwards successfully vaccinated and the notification was accordingly cancelled and the case was returned as chickenpox. The latter, who was unvaccinated, was of the haemorrhagic type and died.

Cholera and Plague. No cases were admitted during the year.

Diphtheria. There were 152 admissions. Fifty-three of these were of the laryngeal type of which thirty-five necessitated immediate tracheotomy. Of these, twenty-two died after the operation. Out of the forty-one deaths under this head, twenty-four died within 24 hours of admission.

Of the 152 admissions, 7 were below 1 year of age of whom 6 died

68	„	from 1—5 years	„	22	„
38	„	„ 5—8	„	9	„
19	„	„ 8—15	„	4	„
20	„	above 15	„	none	died.

The nationalities treated were 10 Europeans, 13 Eurasians, 117 Chinese, 2 Malays, 8 Indians and 2 Japanese.

Chickenpox. As already mentioned this disease accounts for the largest number of admissions and needs little comment.

Other Diseases. 72 patients admitted suspected to be suffering from one or other of the notifiable infectious diseases were found to be actually suffering from some other disease. Of these, 11 died—the causes of death being Marasmus 1, Bronchitis 2, Tetanus 1, Broncho-Pneumonia 6, Nephritis 1. The remaining were either discharged or transferred to other hospitals.

Nationalities. The patients belonged to the following nationalities and the foregoing summary sets out the number of days spent by each in Hospital:—

Nationality	Remaining in 1933		Admitted in 1934	
	No.	Days	No.	Days
Europeans	—	—	30	636
Eurasians	1	14	66	1,350
Chinese	24	382	402	5,814
Indians	13	101	360	5,234
Malays	3	24	69	688
Japanese	—	—	3	226
	41	521	930	13,948

(88-D)

The total number of days spent in hospital, including patients remaining from 1933, was 13,948 as compared with 12,917 last year.

The following table shows the admissions to Middleton Hospital during the past ten years:—

Disease	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Cholera	—	16	20	4	—	—	—	—	—	—
Small-pox	9	30	16	8	9	—	3	7	1	1
Plague	21	1	2	3	—	—	—	—	1	—
Chickenpox	277	155	180	324	553	334	196	491	252	398
Diphtheria	32	25	16	42	38	35	46	90	159	152
Cerebro-spinal Fever ..	7	6	14	13	3	17	6	6	3	7
Measles	49	70	69	94	42	60	58	7	110	58
Erysipelas	2	11	3	6	1	7	1	—	2	2
Mumps	27	47	79	48	66	10	17	22	178	149
Whooping Cough ..	1	6	4	8	1	14	20	3	8	6
Typhoid Fever ..	1	3	1	—	—	1	1	1	—	—
Tuberculosis	1	1	—	1	1	1	1	2	3	4
German Measles ..	7	3	18	7	6	5	14	4	1	40
Scarlet Fever ..	—	1	—	3	6	—	—	—	—	2
Typhus Fever ..	—	—	—	1	—	—	1	2	—	1
Puerperal Fever ..	—	—	1	—	—	1	2	—	—	—
Contacts	19	18	42	45	17	48	22	36	357	37
Other Diseases ..	17	32	52	63	63	44	46	55	85	73
Total ..	470	425	517	670	806	577	433	724	1,160	930

I have the honour to be,

Sir,

Your obedient servant,

A. THURAI,

Acting Medical Superintendent.

MUNICIPAL HEALTH OFFICE,

SINGAPORE, 26TH FEBRUARY, 1935.

THE MUNICIPAL HEALTH OFFICER,
SINGAPORE.

SIR,

I have the honour to submit my fifteenth Annual Report on the Municipal Markets, their repair and upkeep, and the inspection of foodstuffs exposed for sale in them and in shops and stores within Municipal Limits.

MUNICIPAL MARKETS.

One new market or rather vegetable mart was opened at the end of the year at Paya Lebar but this comes under the control of the Superintendent of Town Cleansing. Otherwise we still have 10 Municipal Markets and 2 private markets spreading from Joo Chiat Road to Morse Road, and Bukit Timah Road to Kreta Ayer. They have been kept in good order by the staffs. On Chinese New Year's day they were completely emptied and cleansed from roof to floors. One nest of small vermin was all that could be found. The Superintendent of the Fire Brigade must again be thanked for the loan of an engine to reach the high roofs of Telok Ayer and Ellenboro'.

REPAIRS.

Clyde Terrace Market. The roof of the fish section and the central guttering of main building were overhauled in August and September.

Ellenboro' Market. The market office was repaired, painted and colourwashed.

Grange Road Market. The railings which were broken down by a large tree which fell across them during a storm were replaced. Half the flooring was taken up and relaid.

Orchard Road Market. All the meat tables were covered with aluminium tops in place of zinc.

Telok Ayer Market and Ellenboro' Market. All old zinc-covered eating stalls were replaced by white glazed-tiled ones.

General. Repairs to roofs, drains, awnings and carriageways were carried out on request and all water and lighting services maintained in working order.

UNSOUND FOODSTUFFS.

78,345 catties of unsound foodstuffs, chiefly bad fish, were taken to the incinerator by our coolies. This is nearly 47 tons and all is sprinkled with Jeyes before being sent.

PRICES AND QUANTITIES OF FOODSTUFFS.

The total quantity of recorded foodstuffs shows a drop of half a million catties as compared with last year, but the approximate value has risen by just over \$300,000. This is apparently accounted for by the better prices ruling during the latter part of the year when business took on a decidedly more optimistic view and money was freer.

The following table shows comparative prices of the chief articles:—

TABLE (A).

ARTICLE	Per	1914 Av. Price	1924 Av. Price	1928 Av. Price	1932 Av. Price	1933 Av. Price	1934 Av. Price
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Beef ..	Kati	.25	.41	.53	.35	.30	.29
Mutton ..	lb.	.35	.62	.55	.36	.33	.31
Pork ..	Kati	.38	.63	.60	.47	.42	.41
Tea ..	„	.50	.92 pkt.	.98 pkt.	.84 pkt.	.83	.85
Coffee beans ..	„	.36	.47	.67	.39	.40	.40
Sugar ..	„	.07	.14	.09	.05	.05	.05
Salt ..	„	.02	.03	.04	.03	.03	.02
Potatoes ..	„	.07	.12	.11	.07	.06	.05
Yam ..	„	.03	.06	.07	.04	.03	.03
Onions ..	„	.06	.09	.11	.06	.05	.05
Ducks ..	Dozen	6.00	9.60	10.20	6.00	6.00	5.40
Pigeons ..	Pair	.75	1.10	1.20	.80	.78	.70
Eggs (hens) ..	Dozen	.30	.52	.55	.39	.31	.30
Capons ..	Kati	.42	.73	.91	—	—	—
Fowls ..	Each	.55	.53	1.85	.70	.60	.50
Rice ..	Gantang	.33	.57	.45	.28	.25	.23

The above table will show that the average prices ruling throughout the year were the lowest since 1914, but they already show signs of upward movement with the trend of improved business. I had hoped that through healthy competition mutton would have been lower priced, but I am afraid I was too optimistic and that business instincts prevailed.

REVENUE (TABLE B).

MARKET	1930	1931	1932	1933	1934
Clyde Terrace ..	\$163,492.65	\$135,399.03	\$120,583.78	\$107,441.29	\$119,857.82
Ellenborough ..	108,947.37	93,524.63	80,176.91	69,124.92	71,709.22
Telok Ayer ..	29,290.31	27,250.93	23,210.57	20,167.00	19,337.50
Orchard Road .	13,927.50	15,962.00	14,814.50	14,086.50	14,105.00
Kandang Kerbau .	18,892.00	18,811.50	18,617.00	17,302.00	17,645.00
Grange Road ..	2,628.00	2,247.00	1,850.00	1,662.00	1,790.00
Geylang ..	3,919.00	577.00	abolished	abolished	abolished
Sims Avenue ..	1,345.00	4,034.00	4,288.50	4,103.50	3,742.50
Maxwell .	449.00	9,152.00	8,280.00	7,259.50	7,407.50
Peoples Park ..	14,176.00	13,254.50	12,936.00	9,752.50	9,203.50
Joo Chiat ..	3,350.00	3,178.00	1,288.00	545.50	383.75
	\$360,416.83	\$323,390.59	\$286,045.76	\$251,444.71	\$264,181.79

5% Commission on Fresh Fish Sale.

MARKET	1929	1930	1931	1932	1933	1934
Clyde Terrace ..	\$120,051.98	\$110,660.65	\$ 84,582.03	\$ 73,861.78	\$65,787.79	\$78,719.82
Ellenborough ..	71,866.59	64,071.37	50,016.13	40,069.91	32,919.92	35,547.72
Telok Ayer ..	1,903.30	1,462.31	1,037.93	490.07	abolished	Nil
	\$193,821.87	\$176,194.33	\$135,636.09	\$114,421.76	\$98,707.71	\$114,267.54

It is pleasing to record an increase in revenue mainly derived from 5% commission after the previous two years' fall. It amounts to just over 15% and is an indication of the better prices ruling and the ability of the buying public to purchase more and better goods. Stall-rents have not shown any improvement in the aggregate—Joo Chiat is still practically empty and does not even pay for its upkeep, although rents were reduced by half to induce stall-holders to come in.

STAFF.

I was granted long leave from March 2nd returning to the Colony on 30th October. My duties were divided among the inspectors under Mr. McMorine.

Mr. Ng Bak Kwang, after nearly a quarter of a century's faithful and efficient service during which time he rose to be Manager of Ellenborough and other markets, retired on reaching the age limit at the end of March. His knowledge of the markets was illimitable as he worked under the farmers before the Municipal Commissioners took over. I miss his valued help, willingly and often humorously given.

Kasi, overseer of Telok Ayer, was boarded out suffering from Tuberculosis. He has been replaced.

108 coolies reported sick at various times and were sent to hospital or treated by the Medical Officer in charge of Staff. All have resumed work.

RETURNS.

The following returns are supplied regularly:—

Weekly. Price lists to Press, Registrar General of Statistics etc.

Monthly. Total catch of fish to Fisheries Officer. Average monthly prices to Registrar General of Statistics.

Quarterly. Stock of foodstuffs in markets on 1st day of each quarter to Registrar General of Statistics.

Sundry reports on request from Health Departments in the Federated Malay States.

TOWN:

13,448 cases, tins etc. of unsound foodstuffs were surrendered by their owners and destroyed. Samples, official and informal, were taken of all kinds of foods and drugs particulars of which will be found in the Analyst's Report. It was found that in nearly all cases of tinned green peas from China that copper compounds in excess of what is allowed by the Regulations were present. A special drive was made resulting in thousands of tins being surrendered. Advice was given to importers to refrain from further importation and to notify their suppliers of the defect.

I made surveys of such varied commodities as gorgonzola, hams, sardines, rice, raisins etc. and in every case owners agreed to my instructions regarding their disposal.

I attach returns showing the approximate amount of foodstuffs passing through the markets with their estimated value, the quantity of unsound foodstuffs destroyed and a summary of vacant stalls at the end of December.

I have the honour to be,

Sir,

Your obedient servant,

M. N. MACMAHON,

Cert. R. San. Inst.,

Food and Market Inspector.

RETURN OF SOME OF THE FOODSTUFFS PASSING THROUGH MARKETS DURING 1934.

Market.	Wetfish ctts.	Boiled Fish ctts.	Shell Fish ctts.	Beef ctts.	Mutton ctts.	Pork ctts.	HEADS					Bean Cakes ctts.	Bean Sprouts ctts.	Approx. Value \$ cts.
							Fowls	Capons	Geese	Ducks.	Pigeons.			
Clyde Terrace ..	13,239,431	49,750	143,965	381,675	284,060	476,905	55,041	...	650	24,069	3,693	236,735	25,790	2,053,635 78
Ellenborough ..	3,813,535	12,721	152,925	11,360	2,533	424,288	14,456	1,563	4,512	14,123	308	133,786	38,187	897,855 35
Telok Ayer ..	40,368	...	49,740	26,864	55,420	215,290	35,793	...	725	14,280	1,719	...	...	159,712 85
Kandang Kerbau ..	908,412	26,392	6,006	186,389	141,302	441,161	74,245	...	...	11,254	...	57,713	...	484,662 91
Orchard Road ..	655,744	29,894	...	262,205	38,083	328,905	61,492	...	...	6,438	4,280	39,870	44,040	407,163 02
Peoples Park ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maxwell Road ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grange Road ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sims Avenue ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Joo Chiat Road ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ..	18,657,490	118,757	352,636	868,493	521,398	1,886,549	241,027	1,563	5,887	70,164	10,000	468,104	108,017	4,003,029 91

M. N. MACMAHON,

Cert. R. San. Inst.,

Food and Market Inspector.

UNSOUND FOODSTUFFS DESTROYED DURING 1934.

Market.	Wetfish ctts.	Saltfish ctts.	Beef ctts.	Lamb ctts.	Pork ctts.	Vegetables ctts.	Fruits ctts.	Tinned Goods.		Bottles preserves No.	Eggs No.	Miscella- neous	Items.
								Cases.	Tins.				
Clyde Terrace	42,682	..	246	..	20	3,897	402	..	37	..	726	75	..
Ellenborough	9,218	425	..	..	..	471	..	..	35	..	472	1,944	..
Telok Ayer	..	..	3	..	..	8,478	1,487	..	6	..	30	2	..
Kandang Kerbau	117	..	..	..	..	354	..	..	..	..	..	..	..
Orchard Road	..	..	..	..	..	4,657	1,776	..	..	..	..	..	..
Maxwell Road	42	..	..	..	65	387	33	..	..	..	20	..	..
Joo Chiat Road	..	3	..	..	..	..	..	..	2	..	..	..	..
Grange Road	..	..	..	..	..	..	..	..	..	..	..	..	..
Peoples Park	..	..	..	..	..	..	..	..	..	..	..	..	..
Sims Avenue	11	37	..	..	3	182	..	..	..	..	..	..	*
	52,070	465	249	..	88	18,426	3,698	..	80	..	1,248	2,021	78,345
Town	..	..	..	1,056	..	..	..	1,121	9,069	1,040	..	1,162	13,448
Total	52,070	465	249	1,056	88	18,426	3,698	1,121	9,149	1,040	1,248	3,183	91,793

* = 47 Tons.

M. N. MACMAHON,
 Cert. R. San. Inst.,
Food and Market Inspector,

SUMMARY OF VACANT STALLS END OF DECEMBER, 1934.

(95-D)

	Clyde Terrace. No.	Ellen- borough. No.	Telok Ayer. No.	Orchard Road. No.	Kandang Kerbau. No.	Maxwell Road No.	Joo Chiat. Road No.	Grange Road. No.	Peoples Park. No.	Sims Avenue. No.
Dry Goods	24	2	1	1	..	11	5	..	..	3
Beef	5	1	..	..	..	5	5	6	..	1
Salted Vegetables .. ..	..	..	..	..	..	2	2	..	..	2
Mutton .. ..	..	..	..	..	1	..	5	..	..	1
Pork	7	3	6	2	..	8	10	1	4	4
Curry Stuff .. ..	..	..	..	..	..	..	1	..	..	..
Bean Cakes .. ..	..	..	..	3	..	6	3	..	..	1
Poultry .. ..	..	..	3	1	..	12	1	..	3	3
Vegetables and Fruits	13 24	22 15	26	10	10	37	13	6	..	18
Eggs .. ..	..	..	..	2	..	3	2	..	..	..
Money Changer .. ..	..	..	..	..	..	1	..	..	..	..
Eating .. ..	..	1	7	..	..	..	..	..	..	..
Fish	8	22	3	15	..	30	36	9	10	3
Shell Fish .. ..	..	..	..	..	..	..	..	..	..	..
Hawkers .. ..	..	6	..	..	..	..	1	..	..	..
Soda Fountain * .. ..	..	..	..	..	* 1	..	..	..	..	..
Provisions .. ..	..	..	..	2	..	..	..	3	..	..
Dressed Ducks .. ..	..	..	..	..	..	3	..	..	..	..
TOTAL	81	72	46	36	12	118	84	25	17	36

M. N. MACMAHON,
Cert. R. San. Inst.,
Food and Market Inspector.

HEALTH DEPARTMENT.

Return of Prosecutions for Year ending 31st December, 1934.

OFFENCES.	TOTAL					Fines \$ cts.
	Prosecutions	Withdrawn	Not Served	Convictions		
Municipal Ordinance 135.						
Obstructions Section	116	—	—	—	—	
Offensive matter flowing into Public Drain	127	—	—	—	—	
Establishing a private market	191	—	—	—	—	
Unlicensed Offensive Trades	204	5	9	47	251 00	
Using nightsoil/or urine as manure	206	—	—	—	—	
Latrine etc. notice not complied with	212	—	—	—	—	
Nightsoil kept for more than 48 hours	216	—	—	—	—	
Filthy premises	226	2	1	63	447 00	
Limewash notice not complied with	227	—	—	1	2 50	
Non-compliance of notice for the destruction of rats and mice	228	—	—	—	—	
Non-compliance of notice of demolition order of insanitary dwelling	229	—	—	—	—	
Allowing premises to be overcrowded	230	—	—	—	—	
Non-compliance with Nuisance Notice	239	26	—	26	48 50	
Carried forward ...	154	7	10	137	\$749 00	

HEALTH DEPARTMENT.

Return of Prosecutions for Year ending 31st December, 1934—(Contd.)

OFFENCES.	TOTAL				
	Prosecutions	Withdrawn	Not Served	Convictions	Fines
					\$ cts.
	154	7	10	137	\$749 00
Non-compliance with Nuisance Order Section 240	—	—	—	—	—
” ” Closing Order ” 240	35	3	14	18	—
Non-compliance of order for demolition of house unfit for human habitation ” 241	—	—	—	—	—
Non-compliance with Well Notice ” 247	—	—	—	—	—
Opening Well without permission ” 247	—	—	—	—	—
License not exhibited ” 371	2	2	—	—	—
Byelaws-Sections 57 & 204 M. O. 135.					
Unlicensed Foodshops	199	12	20	167	777 50
” Milk Vendors	178	16	1	161	844 00
Employing women without permission of H. O. ...	4	—	—	4	43 00
Opening licensed premises during prohibited hours ...	9	—	—	9	101 50
Conveying milk for sale without regulation bottles ...	26	—	—	26	62 50
Carried forward ...	607	40	45	522	\$2,577 50

HEALTH DEPARTMENT.

Return of Prosecutions for Year ending 31st December, 1934---(Contd.)

OFFENCES.	TOTAL				
	Prosecutions	Withdrawn	Not Served	Convictions	Fines
<i>Brought forward</i> ...	607	40	45	522	66 \$2,577 50
Failing to have name and address marked upon the vehicle/can	22	—	—	22	34 00
Unlicensed Piggeries	263	8	14	241	1,303 50
Filthy Stables, Cowsheds etc.	5	—	1	4	48 00
Breaches of the Foodshop Byelaws	112	1	3	108	492 00
(98-D)					
Markets and Slaughter Houses.					
Selling vegetables within 50 yards of market	—	—	—	—	—
Unsound Food	—	—	—	—	—
Slaughtering Animals except in Abattoirs	1	—	—	1	3 00
Market Byelaws	141	6	1	134	674 00
Sale of Food and Drugs Ordinance No. 139.					
Selling adulterated Tincture of Iodine	2	—	—	2	19 00
„ adulterated Milk	59	1	2	56	655 42
<i>Carried forward</i> ...	1,212	56	66	1,090	\$5,806 42

HEALTH DEPARTMENT.

Return of Prosecutions for Year ending 31st December, 1934—(Contd.)

OFFENCES.	TOTAL				
	Prosecutions	Withdrawn	Not Served	Convictions	Fines
					\$ cts.
	1,212	56	66	1,090	\$5,806 42
<i>Brought forward</i> ...					
Selling Skimmed Milk without licence ...	1	—	—	1	14 50
” adulterated Lard ...	1	—	—	1	0 50
” Green Peas containing Crystallized Copper Sulphate ...	1	—	—	1	3 50
(99-D)					
Q. and P. Disease Ordinance No. 157.					
Failing to report case of Inf. Disease ...	3	—	—	3	58 50
Moving patient without permission ...	1	1	—	—	—
Exposing patient while suffering ...	—	—	—	—	—
Conveying patient in public vehicle ...	—	—	—	—	—
Failing to have child vaccinated ...	142	10	12	120	—
Failing to bring child for inspection ...	—	—	—	—	—
Registration Births and Deaths Ordinance No. 59.					
Failing to Register Births ...	27	1	1	25	3 00
Failing to Register Deaths ...	—	—	—	—	—
<i>Carried forward</i> ...	1,388	68	79	1,241	\$5,886 42

HEALTH DEPARTMENT.

Return of Prosecutions for Year ending 31st December, 1934—(Contd.)

OFFENCES.	TOTAL				
	Prosecutions	Withdrawn	Not Served	Convictions	Fines
					\$ cts.
<i>Brought forward</i> ...	1,388	68	79	1,241	\$5,886 42
Destruction of Mosquitos Ordinance No. 174.					
Failing to comply with notice ... Section 1-8	4	—	1	3	11 50
Recovery of costs of work done ... ” 7-1	—	—	—	—	—
Destroying Anti-malarial Works ... ” 14	—	—	—	—	—
Milking Cows without first cleaning the udder and teats ...	1	—	—	1	4 50
	1,393	68	80	1,245	\$5,902 42

(100-D)

Summary.

Total	Inspections	...	...	42,583
”	Prosecutions	...	...	1,393
”	Withdrawn	...	...	68
”	Not Served	...	...	80
”	Convictions	...	...	1,245
”	Fines	...	...	\$5,902.42

N.B.—Costs are not included in the amount of fines.

RETURN OF NOTICES SERVED AND COMPLIED WITH ETC., DURING THE YEAR, 1934.

NATURE OF NOTICE.	Brought forward from last year.	Served during the year.	Total.	Complied with during the year.	Carried forward to next year.	REMARKS.
Limewash Notice	69	1,747	1,816	1,659	150	7 Cancelled
Intimation Notice	75	605	680	586	25	69 "
Nuisance Notice	3	214	217	77	138	2 "
Well Notice	15	36	51	48	—	3 "
Drain Notice	—	10	10	10	—	
Latrine Notice	—	26	26	19	6	1 "
Anti-Mosquito Notice	7	120	127	80	47	
Abatement Order	36	19	55	19	—	36 "
Closing Order	—	35	35	19	—	16 "
Demolition Order	—	16	16	14	2	
Total	205	2,828	3,033	2,531	368	134 Cancelled

H. BENJAFIELD,

Chief Sanitary Inspector.

Return of Licences Issued under the Offensive Trade By-Laws for the year 1934.

NATURE OF LICENCE.	Per Annum +	Number Issued.	CASH RECEIVED		DETAILS OF LICENCES ISSUED												
			\$	cts.	For One Year	For One Month	For 2 Months	For 3 Months	For 4 Months	For 5 Months	For 6 Months	For 7 Months	For 8 Months	For 9 Months	For 10 Months	For 11 Months	
Blachan Store	24	7	158	00	6	..	..	..	..	..	..	1	..	..	..	..	..
Brick Kiln	50	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dye House	12	7	84	00	7	..	..	..	..	..	..	..	..	..	..	..	..
Drying and Sorting Fish	12	3	36	00	3	..	..	..	..	..	..	..	..	..	..	..	..
Fruit Preserving	50	13	179	29	..	..	12	..	..	..	..	1	..	..	..	..	..
Knacker's Yard	12	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lime Making	12	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lye Making	12	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Laundry	1	335	335	00	335	..	..	..	..	..	..	..	..	..	..	..	..
Offal Boiling	12	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pottery Works	6	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Private Market	1	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rags and Bones Store	6	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sago Factory	50	4	200	00	4	..	..	..	..	..	..	..	..	..	..	..	..
Sauce Factory	12	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sheep or Goat Pen	12	3	36	00	3	..	..	..	..	..	..	..	..	..	..	..	..
Sugar Boiling	50	3	150	00	3	..	..	..	..	..	..	..	..	..	..	..	..
Soap Boiling	12	6	72	00	6	..	..	..	..	..	..	..	..	..	..	..	..
Sick Receiving House	1	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tannery	50	4	200	00	4	..	..	..	..	..	..	..	..	..	..	..	..
CATTLESHEDES, PONYSTABLES, COWSHEDS:																	
9 Animals and Under per head @	1	4	25	00	4	..	..	..	..	..	..	..	..	..	..	..	..
10—14 Animals	10	4	40	00	4	..	..	..	..	..	..	..	..	..	..	..	..
15—24 "	15	1	15	00	1	..	..	..	..	..	..	..	..	..	..	..	..
25—50 "	25	3	50	00	1	..	..	..	..	..	..	2	..	..	..	..	..
Over 50 "	50	7	350	00	7	..	..	..	..	..	..	..	..	..	..	..	..
LICENCE TO IMPORT FROZEN MEAT	..	3	1,062	00	3	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL	..	407	\$2,992	29	392	..	..	12	..	..	2	2	..	..	..	..	..

